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### An Address.<sup>1</sup>

By BRIAN H. SWIFT,

Retiring President, South Australian Branch of the British Medical Association.

TONIGHT I address you as the retiring president at the end of Victory Year. When peace came so dramatically in August of last year, we were overcome by the sudden relief from years of strain, by the exhilaration of final victory, and by the prospect of friends and relatives returning home. Our happiness was tempered by the thought of those whose husbands, brothers and friends had paid the supreme sacrifice, and who would not return.

In the months that have passed since victory was achieved in the Pacific, we have been able to adjust ourselves in some measure to the modern peace-time world, and to look around us once again with an objective eye. We all realize, I think, that the future, although by no means rosy, is full of interesting possibilities, and that there must be no slackening of effort if we are to carry on conscientiously our job as members of the medical profession.

We welcome back those who have returned from the services. Approximately 170 doctors joined from South Australia—a splendid record—and already most of them have returned. We remember the fallen six of our members. Major S. L. Seymour, killed while on duty with a mobile operating theatre at El Alamein, was the first to give his life.

We welcome with particular warmth those medical officers who were prisoners of war. The magnificent work which these men did in the prisoner-of-war camps will

never be forgotten by the troops they cared for—Dr. Binns captured in Cyrenica, Dr. Hobbs and Dr. Krantz in Singapore. The thought of their work makes us proud of them.

I should like to pay a special tribute to those civil practitioners who carried on during the war years in depleted numbers and often under great difficulties of lack of hospital accommodation and of never-ending work. The work of senior students who acted as resident medical officers at the hospitals and even did *locum tenens* work, must not be forgotten.

The return of doctors from the services has brought with it a new problem. Some of them are young graduates who had not practised except in the forces, apart from short jobs as house surgeons. For these men, courses of post-graduate training have been arranged by the University and at the Adelaide Hospital. Up to the present many officers have taken these courses, and, I am sure, have benefited greatly from them. The attitude of mind of the young service doctor adjusting himself to peace-time practice, and the various problems confronting him, deserve the most sympathetic response and cooperation from older members of the profession. These men are all restless and do not quite know what they want to do, but one thing is certain, they want to make a living.

The medical men who had practices to return to have also found many problems. In some cases other doctors have acquired many of their patients, and this has brought forth many complications which can be settled only by the various parties talking the matter over between themselves. Doctors who did not go away have been over-worked during the last six years, and they have had more patients and more work than they could cope with. Now, with the return of the service medical men, it is up to them to help the returned doctors by offering them partnerships or assistantships. It is a difficult problem, but if the offers to become partners or assistants are not available, many of these returned men will be led to squat in

<sup>1</sup>Read at the annual meeting of the South Australian Branch of the British Medical Association on June 26, 1946.

districts where they think there is an opening. Surely, if a new doctor comes to a district and calls on the doctor in that district, the established man should try to cooperate and help the new man to the best of his ability.

Up to the present, many doctors have taken partners and assistants, but there are still a number of returned men who cannot acquire practices. At the present rate of taxation (although it is to be hoped that that will not continue much longer) it will be very little financial loss, if any, if a partner or assistant be taken into the practice.

The returned medical officer often hears how hard the man who did not go away has had to work. This is rather annoying to him, as he is now only too willing to lighten that load of excessive work. It is also very difficult for the people who were patients of a man who has been away for perhaps five or six years. They have got used to their new doctor, but in reality they are the patients of the man who went away. In some cases they do not wish to return to their old doctor, but want to carry on with their new one. This, I feel, is another problem that can be settled only by direct contact between the two doctors. Finance also enters into the matter, as the prices of practices on the market today are, in many instances, far above the heads of the buyer. And with the bogey of a salaried medical service in the background, neither seller nor buyer knows where he stands.

And now for a few general observations before passing on to some of our more particular problems. The war has left us poorer in many respects, but it has certainly left us far richer in experience and knowledge than we were. As against a certain psychological debility, which expresses itself in the phrase, "What's the use?", we can offset a notable toughening of character among those who have survived the ordeal. And on the practical side, tremendous strides have been made in research, in the treatment of diseases, and in surgical practice. A score of terms, now known to every layman, leap to the mind. The successful war against malaria, the use of penicillin, "sulpha" drugs, new anaesthetics, the closed plaster treatment of wounds—these are only a few of them. It is almost certain that such a rapid advance would not have been made except under the dire stimulus of war.

The application of these discoveries to peace-time practice is of immense importance. One thinks of the value of research into the treatment of tropical diseases when it is considered in the light of the increased strategic importance of Australia's island territories. Again, much of the knowledge acquired during the war may be switched to the field of occupational diseases and accidents in industry. The study of dietetics has become more important today than it was ever in war-time. For example, the effects of starvation diet on the reproductive functions of both men and women have been brought home to us.

No effort must be spared to ensure that the Commonwealth and State Governments are kept alive to the necessity of providing adequate funds so that research can be continually maintained. Our governments seem to have no idea of the amount of money required to perform research in an adequate manner.

Apart from the experience gained, a terrific output of sheer mental, emotional and physical energy was devoted to winning the war. This was especially noteworthy in the field, at times when the situation was against us and our resources were inadequate. The most amazingly successful results were often achieved under cripplingly difficult conditions and with insufficient equipment.

We have to face the fact that there may be a reaction and a slump in effort with the coming of peace. If this happens, the war will have been fought in vain as far as we are concerned. The "all-out" spirit which kept us going for so many years must be maintained as an inspiration for the future and as a practical aid to tackling the problems that confront us. I am afraid we may be apt to be slack.

Like the other free institutions in democratic countries today, the medical profession, with its high standards of individual conduct and efficiency, is threatened by an onrush of what may be called bureaucratic socialism. The

immediate question for us as doctors to consider is not whether socialism is a good or a bad form of government, but whether the bureaucracy which it entails would allow the practice of medicine to function and develop in such a way that the public health would benefit to the greatest possible extent. Medical opinion both in Great Britain and this country seems generally to agree that if socialism means that the medical services are to be placed on the same basis as that of the postal service or the governmental inspection of public health, it will be a national disaster of the first magnitude. In this regard, I should like to refer to the British Medical Association's brochure on the best means of obtaining a complete medical service, which strikes me as being the most lucid and valuable contribution that has yet been made to this contentious question.

The means test is now in operation. The honorary medical officers at the public hospitals have agreed to carry on in an honorary capacity for the time being, as they have always done. At the present time, there are not enough beds in the hospital to cope with the number of patients requiring admission, and so far the means test has not had much effect on the general practitioner. It will, however, affect him very much in the future. Patients requiring an operation will go to the hospital and have it done free of charge. The general practitioner will lose these operations, and he will be hurt financially. The honorary officers at the hospital will be affected to a lesser degree, as they are in charge of a definite number of beds which are always filled.

However, if nationalization of medicine should come into operation, all would be affected. (And here I should like to quote the words of my colleague, Dr. G. M. W. Clemons, of Tasmania, who has said: "Few things are inevitable if we have the will to resist.") Nevertheless, if nationalization does come about, we shall all be controlled. We shall be told where we shall have to practise, what patients we shall have to look after, and the amount of money we shall be allowed to earn. If this state of affairs takes place, all incentive to do good work, to enlarge one's practice, to improve one's knowledge, will, I am afraid, be gradually driven out of us. We shall not look to the patient or to our colleagues for recognition of work well done, but to the head of the department. Promotion in the department will probably be by length of service and by influence—not by ability.

However, before such a scheme could be put into operation many new hospitals would have to be built and many more specialists trained. This would all take years, and in the meantime we, the British Medical Association in Australia, must become firmly united. We must put forward a scheme which will be acceptable to the large majority of the public and one that will not have the disadvantage of being a salaried service. The public does not want to have its medical service lowered to the level of an army sick parade, and hundreds of doctors know what that was like. The average man likes to choose his own medical man, and the family doctor has always occupied a unique position in the psychology of all classes of the community, and I must say emphatically, that it is the Canberra planners, not the public, who are insisting on the nationalization scheme.

The kind of scheme needed is one in which every citizen member contributes something towards the cost of his medical and hospital expenses. Schemes on these lines are being prepared, and in these the patient will be able to choose his own doctor and not have a doctor forced on him. He will feel that he has contributed towards the attention he receives and will have the privilege of selecting what he considers to be the best man and the best attention.

I should now like to change to a subject of a scientific nature, namely, that of the control of cancer.

Some years ago, when there was started in Adelaide a radium clinic for the treatment of cancer, a publicity campaign was launched to try to educate the public regarding the early symptoms of cancer. Stress was laid on certain symptoms, such as irregular hemorrhages and lumps in the breasts, that should warn a woman that she should see her doctor.

It has been found over the years following the campaign that women who have actually obeyed the warning and have gone to their doctor have gone too late; in other words, the disease has been so far advanced that no treatment would cure it, but only alleviate the symptoms. I wish to say a few words regarding cancer of the cervix *uteri*.

From statistics obtained from admittances to my ward at the Royal Adelaide Hospital, it has been found that the number of patients with cancers of the cervix admitted to the ward has increased tremendously. Twenty-two patients were admitted in 1936, whilst last year there were 36. The percentage of those who had a chance of a cure, namely, those in stage I, has not improved. During the last years only three cases have been classed in stage I, namely, those in which the growth has been limited to the cervix. We know that a very high percentage of stage I patients can be cured, yet we are not seeing them. We have advised that the symptom of irregular hæmorrhage should make a woman see her doctor at once, and we must admit that this is usually the first symptom. We must, therefore, look for an earlier sign of this type of cancer, and this can be found only by examination.

This point has already been realized in America, and in several States clinics have been founded with the object of the early detection of cancer, not only of the uterus but of the other organs of the body. For instance, in Philadelphia six cancer prevention clinics are now operating. These were started as long ago as 1938 by MacFarlane, Sturges and Fetterman, who undertook to determine the value of periodical pelvic examination in detection of cancer of the cervix in an early and curable stage. One thousand three hundred volunteer healthy women were found who agreed to have regular periodical general and pelvic examinations. Up to 1944 eighteen cancers of different organs had been found, including three cancers of the cervix.

In Chicago a cancer prevention clinic was started in 1943, and a report of the first 600 patients examined showed ten cancers of the breast and seven cases of suspicious cancer of the cervix, which had been found in 73 cases of erosion of the cervix.

At the Strang Cancer Prevention Clinic at the Memorial Hospital in New York, from 1940 to 1945, 654 patients were examined and 49 malignant tumours of all kinds were found.

Similar figures have been published from other prevention clinics, and Greenhill says: "The detection of so many unsuspected cancers surely justifies routine check-up and advocates a twice yearly examination of the breasts and pelvis of every woman."

Now surely some form of cancer preventive clinic or tumour preventive clinic could be started in Adelaide, where women who cannot afford to pay for private examinations, or who do not want to go to their own doctor, could go for a periodical check-up.

We have in Adelaide a free chest X-ray department to detect early tuberculosis, and a cancer preventive clinic could be started on similar lines. We all know that women who have a fear of cancer often seem to develop one.

This preventive clinic would, I feel sure, be a boon to this type of woman, and many early cancers which could be cured would be discovered. It would be difficult or impossible for a medical man to advise each of his women patients to report once or twice a year for an overhaul of her pelvis. He would at once be accused of making work for his own benefit. However, if such a preventive clinic were started where women could go for periodical examination, and if the clinic were to be run on proper lines, then any woman who was found to have a growth could at once be referred to her own doctor, and I am sure that a number of cancers of the cervix would be found before they were past the curable stage. It is a most depressing position; patient after patient with advanced cancer of the cervix is being admitted to hospital. I feel something ought to be done to try to catch this disease in its early stage, namely, really before symptoms show themselves.

And now what of the future? There are many openings for the younger men to take up industrial medicine. South

Australia is acquiring more and more new industries, and there are many medical problems associated with them. A healthy workman, working under good conditions which could be supervised by the medical man as regards light, colour, noise, rest periods and safety factors, works better and is contented and so causes less industrial troubles and strikes.

We all of us fear that we are about to be taken over and be told what we are to do and to be supervised. We must all be interested, but I am afraid a big percentage of medical men have not given the matter much thought, beyond how a salaried service will affect them. We must all think of the profession as a whole, and not of ourselves as individuals, but we must all unite against the giving up of our freedom. We all like our work, every doctor must, otherwise he would not work the clock round, and we are all imbued with this same ideal of giving our patients of our best, and not merely what the Government tells us we should give. We must stand united to protect our freedom from interference.

Being ill is a very expensive business, and we, the members of the British Medical Association in Australia, must formulate some plan to relieve the unfortunate people who are genuinely unable to stand the high cost of sickness. This plan must be acceptable to them and of a kind that will give them the best attention. It must also be a plan that will leave us with our freedom and enthusiasm to carry out our work to the best of our ability, as we have always done in the past and as we hope to continue to do in the future.

#### SEASONAL VARIATIONS IN THE ASCORBIC ACID CONTENT OF THE AUSTRALIAN DIET.

By MAVIS HONEY,

*From the Australian Institute of Anatomy,  
Canberra.*

FRUIT and vegetables are of particular importance in the diet, since by far the greatest proportion of ascorbic acid is derived from these two groups of food; the remainder, a very small amount, is contributed by milk.

The results of the food consumption survey carried out in 1944<sup>(1)</sup> show that the average *per capita* daily intake of ascorbic acid varied from State to State and in the various regions within each State. It is well recognized that the supply of most species of fruit and some vegetables is subject to seasonal variations; thus it is to be expected that the amount of ascorbic acid contributed by fruit and vegetables will fluctuate. To obtain a clear picture of the nutritional status of a population and to enable agricultural production to be planned on a nutritional basis, it is necessary to know the extent of the seasonal variation of the nutrients, particularly ascorbic acid.

The methods used to collect the data in the 1944 survey were such that it was not possible to investigate each area over a number of seasons, or all areas during the same season. It is for this reason that these results could not be used to determine the seasonal variations in ascorbic acid intake; but the 1938 food consumption survey conducted by the Advisory Council on Nutrition<sup>(2)</sup> does lend itself to this form of treatment, and, moreover, the figures are unaffected by wartime conditions.

The purpose of this paper is to set out the contribution to the total daily ascorbic acid intake made by fruit and vegetables, and to show variations which occur between the seasons amongst households surveyed in Sydney, Melbourne, Brisbane and Adelaide.

In order to ascertain whether 1936-1937 and 1937-1938 were average seasons for the yield of fruit and vegetables, the production figures<sup>(3)</sup> for each kind of fruit and as far as possible each vegetable were compared with those of the preceding five years (1932-1937) and the following five years (1937-1942). A comparison of the total production and the yields per acre of fruit and vegetables revealed that 1936-1937 and 1937-1938 could be taken as average seasons for production in each State under consideration.



### The Data.

The data used for this study were collected in booklets. These were separated into groups according to the month in which the greater part of the investigation was made. All results were then prepared on a monthly basis.

This material was analysed in order to obtain the average daily *per capita* intake of fruit and vegetables, first for each household, then for each city. Allowance was made for the inedible portion of each product. The next step was to calculate the quantity of ascorbic acid contributed by each of the groups of fruit and vegetables. The values for the percentage of ascorbic acid in the products as used in this calculation are shown in Table I.

TABLE I.  
Vitamin C Value of Fruit and Vegetables Used in this Calculation.

Foodstuff.	Milligrammes per 100 Grammes.	Foodstuff.	Milligrammes per 100 Grammes.
Brussels sprouts ..	32	Citrus fruits ..	50
Spinach ..	31	Pineapples ..	25
Cauliflower ..	25	Mangoes ..	25
Tomatoes ..	23	Cantaloupes ..	20
Cabbages ..	20	Rock melons ..	
Potatoes (new) ..	15	Honeydew melons ..	
Potatoes (old) ..	8	Gooseberries ..	
Swede turnips ..	14	Loganberries ..	10
White turnips ..	14	Raspberries ..	
Peas ..	12	Quinces ..	
Paranips ..	10	Bananas ..	
Lettuce ..	6	Nectarines ..	5
Carrots ..	4.5	Cherries ..	
Rhubarb ..	4	Peaches ..	
Beans ..	4	Plums ..	
Black currants ..	200	Pears ..	4
Papaws ..	100	Apples ..	
Strawberries ..	50		

A possible source of error at this stage of calculation must be admitted. The amount of ascorbic acid in similar fresh fruit and vegetables varies according to the maturity, time of picking, variety, season and soil. Substantial losses occur during storage, marketing, preparation and cooking. The values for ascorbic acid in the foods shown in Table I and used in the calculations for this paper take into account as far as possible the losses which occur during cooking. The seasonal reduction in the value for potatoes, as they mature, has also been considered. Owing to the constantly high consumption of potatoes, at certain times of the year, they make a valuable contribution to the total ascorbic acid intake, while after a period of storage this is much reduced. It is stated<sup>(4)</sup> that they lose 50% in one month in earth clamps and 75% after five weeks' storage.

The data as they apply to New South Wales are given in Table II, to Victoria in Table III, to South Australia in Table IV and to Queensland in Table V. The following information is given in each table: (a) the mean weekly consumption of each group of fruit and vegetables in the households surveyed in each month of the year; (b) the contribution of ascorbic acid made by each group towards the total daily intake, expressed in milligrammes and as a percentage of the total.

Whilst the levels of ascorbic acid intake as given in these tables cannot be taken as a measure of the absolute intake, the figures were prepared on a comparable basis and they measure trends between the months and differences between the States.

The amounts of fruit and vegetables consumed serve as a basis for discussion of seasonal variation in each State. The main groups of fruit consumed throughout the year are citrus, tropical and pome fruits. The predominant fruits within these groups are oranges, bananas and apples. The main vegetables consumed with little seasonal change are potatoes and root vegetables. There are pronounced seasonal changes in the consumption of other groups of fruits and vegetables, and these do not coincide in the various States.

### The Seasonal Production of Citrus Fruits.

Because of the important contribution of ascorbic acid made by oranges, a review of the production periods in each State was undertaken.

The harvesting of oranges in New South Wales commences in April with the early crop of Washington navels, reaches full production in May and finishes in November. The Valencia crop commences in early October, begins to fall off rapidly at the beginning of February and finishes in April, while the common oranges, which provide only a small proportion of the total, begin production in July and end in December.

In Victoria the total production and season of Washington navels is much the same as that in New South Wales. The Valencia season extends over the same period as in New South Wales, but is not of such importance. The common oranges, which are harvested from August to November, are of little importance in the total production.

The Washington navel season commences in South Australia in April, maximum production occurs in August and September, and the season finishes in November. The Valencia crop begins to ripen in September and continues with a total production lower than that of Washington navels until March. The common oranges have a short season between September and November.

The statistics relating to the production season of different varieties of oranges in Queensland could not be procured, but figures for citrus fruits available for fresh fruit markets in 1944 show that the plateau of production is from April to August. There is a reduction in the amount available in September and October, and a small amount is produced during the summer months.

### The Weekly Per Capita Consumption of Fruit in Each State.

The consumption figures for citrus fruits closely follow the trend of production of oranges in all States except Queensland. In this State the peak consumption in 1937 occurred in October, while the peak production in 1944 was several months earlier. The general picture in all four States is that during April the intake of citrus fruits is at its lowest point for the year. At this time this group forms about 8% of the total amount of fruit consumed. This low level is followed by a sharp increase, which reaches the peak consumption in August in New South Wales, in September in Victoria, and in October in South Australia and Queensland. At this time of the year citrus fruits form 47% to 52% of the total fruit intake for the three southern States and in Queensland 33%. A gradual decline in consumption takes place over the summer months, and a pronounced falling off occurs in February, March and April.

Tropical fruits are consumed in amounts which vary little; there is a slight increase over the summer months in all States except Queensland, where 50% of the total fruit intake is of the tropical variety in September. This can be explained by the fact that bananas represent a large proportion of this group and are available in the three more southern States throughout the year, while in Queensland soft tropical fruits, mangoes and papaws contribute a considerable amount to the total fruit consumption during the season.

The soft fruits have a short season, from December to March in New South Wales, Victoria and South Australia, and from October to April in Queensland. During the season of production these fruits represent 27% to 43% of the total fruit intake, while at other times of the year the percentage falls as low as 0.5.

The weekly *per capita* intake of the pome fruits, mainly consisting of apples, is fairly uniform throughout the year in all States, with a slight rise during the apple season. Apples take an important place in the diet, for they are in abundance at a time when little other fruit is available, the season for soft fruits having finished and that for citrus fruit not having commenced.

Berry fruits contribute little to the total amount of fruit consumed; Victoria has the highest figures for these fruits



in February, with an intake of 3.8 ounces *per capita* per week. In Queensland the production period is from June to October, and there also the consumption is low.

#### Vegetables.

Potatoes are by far the most important group of vegetables, in that they form the greatest part by weight of the total amount consumed. In New South Wales and Victoria there is an increase in February and March, while in South Australia there is a slight increase in November and December. The increased consumption is maintained during the winter months.

The intake of green vegetables follows the increase in vegetables of the "brassica" group. There is an increase from May to October, with a decline over the summer months. In Queensland there is no pronounced increase as shown in other States.

Except in Queensland, there is a pronounced seasonal variation in the consumption of salad vegetables. In all other States tomatoes and lettuce are eaten in very small quantities during the winter months. There is an increase in November which reaches a peak in February.

The consumption figure for root vegetables is uniform in all months throughout the year in New South Wales,

TABLE II.

Consumption of Fruit and Vegetables in New South Wales and the Contribution of Ascorbic Acid.

Month and Observations Made.	Citrus Fruit.	Tropical Fruits.	Soft Fruits.	Pome Fruits.	Berry Fruits.	Total Fruit.	Potatoes.	Green Vegetables.	Tomatoes and Lettuce.	Root Vegetables.	Miscellaneous.	Total Vegetables.	Total Ascorbic Acid.
January—													
Mean consumption <i>per capita</i> per week (ounces)...	15.0	11.7	12.8	7.0	—	46.5	23.2	5.4	14.1	6.6	17.4	66.7	—
Ascorbic acid (milligrammes)...	21.3	3.5	3.0	1.0	—	28.8	14.0	6.1	10.8	0.5	2.1	33.5	62.3
Percentage of total ascorbic acid intake .....	34.0	5.7	4.8	1.6	—	—	22.5	9.8	17.3	0.8	3.4	—	99.9
February—													
Mean consumption <i>per capita</i> per week (ounces)...	6.2	9.9	9.9	9.0	—	35.0	37.1	8.3	10.4	6.6	16.3	78.7	—
Ascorbic acid (milligrammes)...	9.0	3.1	2.2	1.2	—	15.5	22.5	8.2	7.7	0.7	2.1	41.2	56.7
Percentage of total ascorbic acid intake .....	15.9	5.4	3.9	2.2	—	—	39.7	14.6	13.6	1.2	3.7	—	100.2
March—													
Mean consumption <i>per capita</i> per week (ounces)...	4.5	6.6	8.0	8.3	—	27.4	34.6	8.0	9.6	8.5	10.0	70.7	—
Ascorbic acid (milligrammes)...	6.5	2.0	1.7	1.2	—	11.3	18.0	8.2	6.3	0.9	1.5	34.9	46.2
Percentage of total ascorbic acid intake .....	14.0	4.3	3.6	2.5	—	—	39.0	17.8	13.6	1.9	3.2	—	99.9
April—													
Mean consumption <i>per capita</i> per week (ounces)...	3.5	7.2	6.4	12.6	—	29.7	32.3	10.9	9.0	6.2	15.4	73.8	—
Ascorbic acid (milligrammes)...	5.2	1.9	1.2	1.7	—	10.0	10.4	10.1	6.7	0.6	2.0	29.8	39.8
Percentage of total ascorbic acid intake .....	13.0	4.9	3.1	4.3	—	—	26.0	25.3	16.9	1.5	5.0	—	100.0
May—													
Mean consumption <i>per capita</i> per week (ounces)...	5.3	5.0	3.4	10.9	—	24.6	33.9	10.9	3.0	10.1	11.7	69.6	—
Ascorbic acid (milligrammes)...	8.1	1.3	0.6	1.5	—	11.5	11.0	9.0	2.3	2.3	1.3	25.9	37.4
Percentage of total ascorbic acid intake .....	21.6	3.5	1.7	4.0	—	—	29.5	24.1	6.0	6.1	3.4	—	99.9
June—													
Mean consumption <i>per capita</i> per week (ounces)...	8.3	6.1	3.2	9.9	—	27.5	35.7	14.1	2.0	12.0	11.0	74.8	—
Ascorbic acid (milligrammes)...	12.0	1.8	0.6	1.4	—	15.8	11.8	10.3	1.5	1.9	0.9	26.4	42.2
Percentage of total ascorbic acid intake .....	28.5	4.2	1.5	3.2	—	—	28.0	24.4	3.5	4.6	2.2	—	100.1
July—													
Mean consumption <i>per capita</i> per week (ounces)...	13.6	6.7	3.2	13.6	—	37.1	37.1	17.1	3.5	9.3	16.0	83.0	—
Ascorbic acid (milligrammes)...	19.5	1.9	0.6	2.1	—	24.1	12.0	14.7	2.4	1.2	1.9	32.2	56.3
Percentage of total ascorbic acid intake .....	34.7	3.3	0.1	3.7	—	—	21.3	26.1	4.3	2.1	3.4	—	99.0
August—													
Mean consumption <i>per capita</i> per week (ounces)...	18.9	4.8	1.3	11.2	0.03	36.23	38.9	15.2	4.0	7.7	12.0	77.8	—
Ascorbic acid (milligrammes)...	27.1	1.3	0.2	1.5	0.1	30.2	12.5	13.2	2.4	0.8	1.5	30.4	60.6
Percentage of total ascorbic acid intake .....	44.7	2.2	0.4	2.5	0.1	—	20.6	21.7	4.0	1.4	2.2	—	99.8
August, 1944—													
Mean consumption <i>per capita</i> per week (ounces)...	14.6	5.3	1.6	10.9	—	32.4	35.2	22.5	5.5	12.8	12.5	88.5	—
Ascorbic acid (milligrammes)...	21.3	2.0	0.3	1.5	—	25.2	11.2	22.3	3.7	2.9	2.8	42.8	68.0
Percentage of total ascorbic acid intake .....	31.3	2.9	0.4	2.2	—	—	16.5	32.8	5.4	4.3	4.1	—	99.9
September—													
Mean consumption <i>per capita</i> per week (ounces)...	17.4	9.3	0.9	8.0	—	35.6	35.7	17.4	6.2	4.8	11.2	75.3	—
Ascorbic acid (milligrammes)...	24.9	4.1	0.2	1.1	—	30.3	11.8	16.2	4.1	0.8	1.4	34.3	64.6
Percentage of total ascorbic acid intake .....	38.6	6.8	0.3	1.7	—	—	18.3	25.1	6.3	1.2	2.2	—	100.5
October—													
Mean consumption <i>per capita</i> per week (ounces)...	15.4	6.7	0.1	6.4	—	28.6	29.4	15.5	7.4	5.9	16.8	75.0	—
Ascorbic acid (milligrammes)...	22.0	1.9	0.04	0.9	—	24.84	9.5	16.1	4.3	1.0	0.8	31.7	56.5
Percentage of total ascorbic acid intake .....	38.9	3.4	0.06	1.6	—	—	16.8	28.4	7.7	1.8	1.4	—	100.0
November—													
Mean consumption <i>per capita</i> per week (ounces)...	13.6	9.4	3.2	6.4	—	32.6	27.7	8.3	7.7	4.6	12.3	60.6	—
Ascorbic acid (milligrammes)...	19.4	2.5	0.9	0.9	—	23.7	16.5	9.2	4.5	0.4	1.7	32.3	56.0
Percentage of total ascorbic acid intake .....	34.6	4.5	1.6	1.6	—	—	29.4	16.4	8.0	0.8	3.0	—	99.9
December—													
Mean consumption <i>per capita</i> per week (ounces)...	9.0	9.8	3.0	5.3	—	27.1	27.7	7.0	12.8	3.5	17.8	68.8	—
Ascorbic acid (milligrammes)...	13.0	2.6	1.2	0.7	—	17.5	16.5	7.7	8.5	0.5	1.7	34.9	52.4
Percentage of total ascorbic acid intake .....	24.8	5.0	2.2	1.4	—	—	31.5	14.7	16.2	1.0	3.2	—	100.0

TABLE III.  
Consumption of Fruit and Vegetables in Victoria and the Contribution of Ascorbic Acid.

Month and Observations Made.	Citrus Fruit.	Tropical Fruits.	Soft Fruits.	Pome Fruits.	Berry Fruits.	Total Fruit.	Potatoes.	Green Vegetables.	Tomatoes and Lettuce.	Root Vegetables.	Miscellaneous.	Total Vegetables.	Total Ascorbic Acid.
January—													
Mean consumption per capita per week (ounces) . . .	7.4	12.8	14.1	7.2	—	41.5	30.2	2.0	12.0	5.0	18.9	68.1	—
Ascorbic acid (milligrammes) . . .	10.6	3.6	3.6	1.0	—	18.8	18.2	2.4	9.2	1.1	3.0	33.9	52.7
Percentage of total ascorbic acid intake . . .	20.1	6.8	6.8	1.9	—	—	34.6	4.6	17.4	2.9	5.7	—	99.9
February—													
Mean consumption per capita per week (ounces) . . .	7.4	11.4	15.5	12.8	3.8	50.9	29.3	2.7	14.2	7.0	12.5	65.7	—
Ascorbic acid (milligrammes) . . .	10.7	3.2	4.0	1.5	1.9	21.3	17.6	2.8	10.9	1.6	2.3	35.2	56.55
Percentage of total ascorbic acid intake . . .	18.9	5.6	7.2	2.7	3.0	—	31.2	5.0	19.2	2.9	4.1	—	99.8
February-March, 1944—													
Mean consumption per capita per week (ounces) . . .	4.1	13.4	27.2	14.1	—	58.8	30.3	14.1	17.6	8.4	13.7	84.1	—
Ascorbic acid (milligrammes) . . .	5.9	3.8	7.5	1.9	—	19.1	18.1	14.7	13.3	2.2	2.9	51.2	70.3
Percentage of total ascorbic acid intake . . .	8.4	5.4	10.7	2.7	—	—	25.7	20.9	18.9	3.1	4.1	—	99.9
March—													
Mean consumption per capita per week (ounces) . . .	8.8	12.0	12.8	16.0	0.05	49.65	32.3	3.8	10.4	5.3	17.8	69.6	—
Ascorbic acid (milligrammes) . . .	13.0	3.4	3.4	2.3	0.1	22.2	15.6	3.9	7.4	1.1	2.3	30.3	52.5
Percentage of total ascorbic acid intake . . .	24.7	6.6	6.4	4.3	0.2	—	29.7	7.5	14.1	2.2	4.4	—	100.1
April—													
Mean consumption per capita per week (ounces) . . .	6.2	10.4	5.1	16.0	—	37.7	43.8	9.0	5.0	10.4	11.7	79.9	—
Ascorbic acid (milligrammes) . . .	9.0	2.8	1.0	2.2	—	15.0	14.0	7.7	3.7	2.3	2.3	30.0	45.0
Percentage of total ascorbic acid intake . . .	20.0	6.3	2.2	4.8	—	—	31.1	17.1	8.3	5.1	5.1	—	100.0
May—													
Mean consumption per capita per week (ounces) . . .	9.3	6.9	2.0	17.8	0.01	36.01	41.9	11.5	3.0	9.4	11.0	76.8	—
Ascorbic acid (milligrammes) . . .	13.7	1.9	0.4	2.6	0.03	18.63	13.4	9.8	2.0	2.1	1.7	29.0	47.6
Percentage of total ascorbic acid intake . . .	28.7	4.1	0.9	5.4	0.1	—	28.1	20.6	4.3	4.4	3.5	—	100.1
June—													
Mean consumption per capita per week (ounces) . . .	13.3	7.8	1.8	16.0	—	38.9	43.8	16.3	1.1	12.6	4.8	78.6	—
Ascorbic acid (milligrammes) . . .	19.1	2.2	0.3	2.2	—	23.8	14.0	14.5	0.5	3.0	0.9	32.9	56.7
Percentage of total ascorbic acid intake . . .	33.6	3.9	0.6	3.8	—	—	24.7	25.6	0.9	5.3	1.6	—	100.0
July—													
Mean consumption per capita per week (ounces) . . .	13.1	3.7	1.3	11.0	—	29.1	37.8	16.5	10.9	0.2	1.9	67.3	—
Ascorbic acid (milligrammes) . . .	18.7	1.1	0.3	1.5	—	21.6	12.0	13.6	0.1	2.6	0.4	28.7	50.3
Percentage of total ascorbic acid intake . . .	37.3	2.1	0.5	2.9	—	—	23.9	27.1	0.3	5.1	0.8	—	100.0
August—													
Mean consumption per capita per week (ounces) . . .	18.0	6.4	1.3	13.3	—	39.0	34.2	15.2	1.8	11.4	3.7	66.2	—
Ascorbic acid (milligrammes) . . .	26.2	1.9	0.3	1.8	—	30.2	11.0	12.9	0.9	2.7	0.7	28.2	58.4
Percentage of total ascorbic acid intake . . .	45.0	3.3	0.5	3.1	—	—	18.9	22.2	1.5	4.5	1.1	—	100.1
September—													
Mean consumption per capita per week (ounces) . . .	21.0	8.5	0.6	10.2	—	40.3	32.3	10.7	3.4	10.9	5.8	63.1	—
Ascorbic acid (milligrammes) . . .	30.2	2.5	0.1	1.4	—	34.2	10.4	10.4	1.9	2.4	1.1	26.2	60.4
Percentage of total ascorbic acid intake . . .	50.1	4.1	0.2	2.3	—	—	17.2	17.2	3.2	3.9	1.8	—	100.0
October—													
Mean consumption per capita per week (ounces) . . .	12.8	9.3	1.9	8.3	—	32.3	31.5	10.7	6.9	4.9	10.7	64.7	—
Ascorbic acid (milligrammes) . . .	18.1	2.6	0.4	1.2	—	22.3	10.2	12.3	2.5	1.5	2.1	28.6	50.9
Percentage of total ascorbic acid intake . . .	35.6	5.1	0.7	2.3	—	—	20.0	24.2	4.9	3.0	4.2	—	100.0
November—													
Mean consumption per capita per week (ounces) . . .	13.3	10.4	2.7	8.5	4.0	38.9	29.4	9.1	8.8	7.2	18.6	73.1	—
Ascorbic acid (milligrammes) . . .	19.1	2.8	0.8	1.2	4.5	28.4	17.6	9.4	5.6	2.2	3.5	38.3	66.7
Percentage of total ascorbic acid intake . . .	28.6	4.3	1.2	1.8	6.7	—	26.4	14.1	8.5	3.2	5.2	—	100.0
December—													
Mean consumption per capita per week (ounces) . . .	10.4	10.7	7.0	6.6	1.8	36.5	25.3	7.7	11.5	8.6	13.0	66.1	—
Ascorbic acid (milligrammes) . . .	15.3	2.9	2.5	0.9	1.6	23.2	15.0	7.7	8.3	1.7	2.3	35.0	53.2
Percentage of total ascorbic acid intake . . .	26.3	4.9	6.3	1.6	2.8	—	25.9	13.2	14.3	2.8	3.9	—	102.0

Victoria, South Australia and Queensland; however, Queensland has a lower intake than the other three States.

The consumption of the remaining group of vegetables, which consists predominately of peas and beans, is increased in the southern States from October to March, while in Queensland there is a decrease in consumption during the winter months.

#### The Mean Daily Intake of Ascorbic Acid.

The mean daily per capita intake of ascorbic acid for each month covered by the survey of a number of households in Brisbane, Sydney, Melbourne and Adelaide is

shown in Figures I to IV. The design of the graphs is such that the contribution of ascorbic acid towards the total daily intake made by the principal groups of fruits and vegetables can be seen. From these graphs it will be observed that some groups are more important than others as sources of ascorbic acid; for example, although apples are consumed in considerable quantities throughout the year, their ascorbic acid value is such that the contribution toward the total daily intake is small. Each State will now be considered separately, from the point of view of total daily ascorbic acid intake from fruit and vegetables and the variation which occurs from month to month.

**New South Wales.**—In New South Wales the maximum *per capita* intake of ascorbic acid occurs in September, while the minimum intake is during May (Figure 1). The main groups which contribute to the total at the peak of intake are citrus fruits, green vegetables and potatoes. A gradual decline in the contribution made by citrus fruits during the summer months is to some extent offset by the higher value of new potatoes. The months from February to May are between seasons for orange production, and the contribution made by citrus fruits falls as low as 5.1 milligrammes per day, compared with 24.0 milligrammes in September. The increase in total ascorbic

acid intake over the winter months is influenced by the introduction of the new season's oranges.

**Victoria.**—In Victoria the main groups which provide ascorbic acid for the daily intake are citrus fruits, potatoes, green vegetables, and over the summer months, salad vegetables. April is the month with the smallest total daily intake of ascorbic acid; at this time citrus fruits contribute only 9.0 milligrammes. There is an increase in the total daily intake over the winter months with irregularities during June and October; the peak is in November.

TABLE IV.  
*Consumption of Fruit and Vegetables in South Australia and the Contribution of Ascorbic Acid.*

Month and Observations Made.	Citrus Fruit.	Tropical Fruits.	Soft Fruits.	Pome Fruits.	Berry Fruits.	Total Fruit.	Potatoes.	Green Vegetables.	Tomatoes and Lettuce.	Root Vegetables.	Miscellaneous.	Total Vegetables.	Total Ascorbic Acid.
<b>January—</b>													
Mean consumption <i>per capita</i> per week (ounces) . . .	3.8	7.2	12.0	4.2	0.5	27.7	35.8	4.5	8.5	4.3	11.8	64.9	—
Ascorbic acid (milligrammes) . . .	5.5	3.5	3.0	0.5	0.6	13.1	21.0	4.5	6.4	0.9	1.2	34.0	47.1
Percentage of total ascorbic acid intake . . .	11.6	7.5	6.4	1.2	1.3	—	44.5	9.4	13.6	2.0	2.5	—	100.0
<b>February—</b>													
Mean consumption <i>per capita</i> per week (ounces) . . .	2.4	6.2	11.5	6.4	0.2	26.7	26.4	3.8	11.5	2.9	7.5	52.1	—
Ascorbic acid (milligrammes) . . .	3.6	1.9	2.9	0.9	0.1	9.4	16.0	3.4	8.6	0.6	1.3	29.9	39.3
Percentage of total ascorbic acid intake . . .	9.1	4.7	7.4	2.3	0.4	—	40.8	8.6	21.9	1.5	3.3	—	100.0
<b>March—</b>													
Mean consumption <i>per capita</i> per week (ounces) . . .	1.8	5.4	9.3	5.8	0.06	22.36	26.7	5.1	11.7	2.7	8.2	54.4	—
Ascorbic acid (milligrammes) . . .	2.6	1.5	2.1	0.9	0.2	7.3	13.0	4.9	9.0	0.5	1.6	29.0	36.3
Percentage of total ascorbic acid intake . . .	7.2	4.2	5.9	2.4	0.4	—	35.9	13.5	24.9	1.4	4.3	—	100.1
<b>April—</b>													
Mean consumption <i>per capita</i> per week (ounces) . . .	2.1	6.6	5.6	17.1	—	31.4	32.2	7.5	6.9	4.5	6.9	58.0	—
Ascorbic acid (milligrammes) . . .	3.2	1.8	1.2	2.8	—	9.0	10.4	6.9	5.1	1.7	1.3	25.4	34.4
Percentage of total ascorbic acid intake . . .	9.4	5.1	3.4	8.1	—	—	30.3	20.1	14.9	4.8	3.8	—	99.9
<b>May—</b>													
Mean consumption <i>per capita</i> per week (ounces) . . .	6.4	6.2	3.2	18.1	—	33.9	28.8	11.4	3.5	7.8	6.2	57.7	—
Ascorbic acid (milligrammes) . . .	9.2	1.7	0.6	2.6	—	14.1	9.4	9.5	2.4	1.7	1.1	24.1	38.2
Percentage of total ascorbic acid intake . . .	24.1	4.4	1.7	6.8	—	—	24.7	24.9	6.2	4.5	2.8	—	100.1
<b>June—</b>													
Mean consumption <i>per capita</i> per week (ounces) . . .	8.3	4.2	1.6	16.5	—	30.6	27.8	13.1	1.8	5.9	3.0	51.6	—
Ascorbic acid (milligrammes) . . .	12.0	1.1	0.3	2.3	—	15.7	9.0	11.0	0.8	1.3	0.6	22.7	38.4
Percentage of total ascorbic acid intake . . .	31.3	2.9	0.8	5.9	—	—	23.4	28.7	2.2	3.4	1.4	—	100.0
<b>July—</b>													
Mean consumption <i>per capita</i> per week (ounces) . . .	11.2	5.4	1.0	15.7	—	33.3	29.1	13.9	1.6	5.4	2.9	52.9	—
Ascorbic acid (milligrammes) . . .	16.8	1.5	0.2	2.1	—	20.6	9.5	11.7	0.8	1.1	0.6	23.7	44.3
Percentage of total ascorbic acid intake . . .	37.9	3.4	0.4	4.8	—	—	21.5	26.5	1.8	2.4	1.3	—	100.0
<b>August—</b>													
Mean consumption <i>per capita</i> per week (ounces) . . .	12.6	5.9	1.0	10.9	—	30.4	30.9	14.2	3.4	5.9	4.6	59.0	—
Ascorbic acid (milligrammes) . . .	17.9	1.6	0.2	1.5	—	21.1	10.0	11.9	2.2	1.3	0.9	26.3	47.4
Percentage of total ascorbic acid intake . . .	37.7	3.4	0.4	3.1	—	—	21.0	25.1	4.6	2.8	2.0	—	100.1
<b>September—</b>													
Mean consumption <i>per capita</i> per week (ounces) . . .	10.2	6.9	1.4	8.5	—	27.0	39.4	14.4	7.5	3.7	8.2	73.2	—
Ascorbic acid (milligrammes) . . .	15.0	1.9	0.3	1.2	—	18.4	12.8	12.8	2.5	1.0	1.7	30.8	49.2
Percentage of total ascorbic acid intake . . .	30.5	3.9	0.6	2.4	—	—	26.1	26.1	5.1	2.0	3.5	—	100.2
<b>October—</b>													
Mean consumption <i>per capita</i> per week (ounces) . . .	15.8	7.8	0.8	8.0	0.2	32.6	28.3	13.0	5.4	3.2	9.3	59.2	—
Ascorbic acid (milligrammes) . . .	22.8	2.1	0.2	1.1	0.2	26.4	14.0	11.2	4.0	0.7	1.8	31.5	57.9
Percentage of total ascorbic acid intake . . .	30.3	3.6	0.3	1.9	0.4	—	24.1	19.3	6.9	1.2	3.1	—	100.1
<b>October, 1944—</b>													
Mean consumption <i>per capita</i> per week (ounces) . . .	14.2	2.0	0.1	17.5	0.4	34.2	36.1	25.2	5.9	9.2	9.3	85.7	—
Ascorbic acid (milligrammes) . . .	20.7	1.1	0.04	2.4	0.7	24.94	17.2	22.5	4.2	1.9	2.1	47.9	72.8
Percentage of total ascorbic acid intake . . .	28.4	1.5	0.05	3.3	1.0	—	23.6	30.9	5.8	2.6	2.9	—	100.0
<b>November—</b>													
Mean consumption <i>per capita</i> per week (ounces) . . .	14.2	9.6	0.8	9.3	0.6	34.5	32.0	12.3	11.7	3.4	13.3	72.7	—
Ascorbic acid (milligrammes) . . .	20.3	2.5	0.2	1.3	1.2	25.5	18.0	12.7	7.5	0.8	2.9	41.9	67.4
Percentage of total ascorbic acid intake . . .	30.2	3.8	0.3	1.9	1.8	—	26.7	18.8	11.1	1.1	4.2	—	99.9
<b>December—</b>													
Mean consumption <i>per capita</i> per week (ounces) . . .	8.5	10.9	7.0	2.9	1.3	30.6	35.2	7.4	8.0	5.4	13.6	69.6	—
Ascorbic acid (milligrammes) . . .	12.3	2.8	1.8	0.5	2.6	20.0	20.9	7.3	6.9	0.4	1.6	37.1	57.1
Percentage of total ascorbic acid intake . . .	21.6	4.9	3.2	0.9	4.5	—	36.6	12.8	12.1	0.7	2.7	—	100.0



TABLE V.  
Consumption of Fruit and Vegetables in Queensland and the Contribution of Ascorbic Acid.

Month and Observations Made.	Citrus Fruit.	Tropical Fruits.	Soft Fruits.	Pome Fruits.	Berry Fruits.	Total Fruit.	Potatoes.	Green Vegetables.	Tomatoes and Lettuce.	Root Vegetables.	Miscellaneous.	Total Vegetables.	Total Ascorbic Acid.
<b>January—</b>													
Mean consumption per capita per week (ounces) ..	1.2	25.9	8.3	3.5	—	38.9	23.4	3.7	10.2	2.7	4.8	44.8	—
Ascorbic acid (milligrammes) ..	3.2	8.2	1.9	0.5	—	13.8	14.0	3.7	6.6	0.4	0.9	25.6	39.4
Percentage of total ascorbic acid intake ..	8.2	20.9	4.7	1.2	—	—	35.6	9.4	16.7	1.1	2.2	—	100.0
<b>February—</b>													
Mean consumption per capita per week (ounces) ..	9.0	27.0	7.5	11.0	—	54.5	24.2	5.3	10.9	2.6	12.8	55.8	—
Ascorbic acid (milligrammes) ..	13.0	11.4	1.5	2.4	—	28.3	14.6	5.2	7.7	0.5	2.3	30.3	58.6
Percentage of total ascorbic acid intake ..	22.2	19.4	2.5	4.0	—	—	25.0	8.9	13.2	0.8	4.0	—	100.0
<b>March—</b>													
Mean consumption per capita per week (ounces) ..	6.7	25.3	7.5	14.2	—	53.7	25.4	4.0	19.5	5.8	10.5	56.2	—
Ascorbic acid (milligrammes) ..	9.7	11.4	1.6	2.1	—	24.8	12.0	4.0	7.7	1.0	2.5	27.2	52.0
Percentage of total ascorbic acid intake ..	18.7	22.0	3.0	4.1	—	—	23.1	7.8	14.7	1.9	4.8	—	100.1
<b>April—</b>													
Mean consumption per capita per week (ounces) ..	4.2	15.2	7.5	11.4	—	38.3	19.4	7.2	8.0	4.0	11.0	49.6	—
Ascorbic acid (milligrammes) ..	6.2	6.8	1.4	1.5	—	15.9	6.4	7.1	5.8	0.7	2.0	22.0	37.9
Percentage of total ascorbic acid intake ..	16.2	18.0	3.8	3.9	—	—	16.9	18.8	15.3	1.9	5.2	—	100.0
<b>May—</b>													
Mean consumption per capita per week (ounces) ..	8.5	12.3	4.3	12.3	—	37.4	22.2	13.4	7.0	4.6	10.9	58.1	—
Ascorbic acid (milligrammes) ..	12.3	4.3	0.9	1.7	—	19.2	7.0	12.7	5.1	1.1	2.0	27.9	47.1
Percentage of total ascorbic acid intake ..	26.3	9.2	1.8	3.5	—	—	14.9	27.0	10.8	2.3	4.2	—	100.0
<b>June—</b>													
Mean consumption per capita per week (ounces) ..	9.6	10.1	3.8	12.3	0.3	36.1	19.7	13.8	7.0	4.0	12.3	56.8	—
Ascorbic acid (milligrammes) ..	14.0	4.5	0.7	1.7	0.5	21.4	6.5	11.6	5.3	0.7	2.5	26.6	48.0
Percentage of total ascorbic acid intake ..	29.2	9.4	1.5	3.5	1.1	—	13.6	24.2	11.0	1.4	5.2	—	100.1
<b>June-July, 1944—</b>													
Mean consumption per capita per week (ounces) ..	14.1	10.0	3.3	15.8	—	43.2	30.8	25.2	10.7	7.1	12.9	86.7	—
Ascorbic acid (milligrammes) ..	20.5	5.5	0.6	2.2	—	28.8	9.8	20.2	8.0	1.3	3.3	42.6	71.4
Percentage of total ascorbic acid intake ..	28.7	7.7	0.8	3.1	—	—	13.7	28.3	11.2	1.8	4.6	—	99.9
<b>July—</b>													
Mean consumption per capita per week (ounces) ..	14.1	10.6	2.1	8.8	0.3	35.9	31.5	8.2	6.9	6.7	9.1	62.4	—
Ascorbic acid (milligrammes) ..	20.2	3.9	0.4	1.2	0.8	26.5	10.0	7.3	5.0	1.4	1.9	25.6	52.1
Percentage of total ascorbic acid intake ..	38.9	7.5	0.8	2.3	1.4	—	19.2	14.1	9.6	2.7	3.6	—	100.1
<b>August—</b>													
Mean consumption per capita per week (ounces) ..	17.8	18.7	3.4	11.4	0.6	51.9	27.7	11.2	12.3	7.5	11.4	70.1	—
Ascorbic acid (milligrammes) ..	25.5	9.8	0.7	1.5	1.0	38.5	9.0	9.7	7.6	1.6	2.0	29.9	68.4
Percentage of total ascorbic acid intake ..	37.3	14.3	1.0	2.2	1.4	—	13.1	14.2	11.1	2.4	3.0	—	100.0
<b>September—</b>													
Mean consumption per capita per week (ounces) ..	16.6	30.2	2.1	11.0	0.03	59.93	24.3	6.9	7.4	4.6	10.6	53.8	—
Ascorbic acid (milligrammes) ..	24.4	24.2	0.4	1.5	0.1	50.6	12.0	5.8	4.8	0.8	2.0	25.4	76.0
Percentage of total ascorbic acid intake ..	32.1	31.9	0.6	2.0	0.1	—	15.8	7.6	6.4	1.0	2.6	—	100.1
<b>October—</b>													
Mean consumption per capita per week (ounces) ..	22.2	29.4	3.7	11.4	0.2	66.9	24.3	11.7	7.8	5.8	7.5	57.1	—
Ascorbic acid (milligrammes) ..	37.8	30.2	0.8	1.5	0.3	70.6	14.0	12.0	5.0	1.1	1.5	33.6	104.2
Percentage of total ascorbic acid intake ..	36.3	29.0	0.8	1.5	0.3	—	13.4	11.5	4.8	1.1	1.4	—	100.1
<b>November—</b>													
Mean consumption per capita per week (ounces) ..	15.0	26.7	5.6	8.8	—	56.1	21.3	7.5	7.7	5.0	4.8	46.3	—
Ascorbic acid (milligrammes) ..	21.7	22.0	1.5	1.2	—	46.4	12.6	7.7	4.8	0.7	0.9	26.7	73.1
Percentage of total ascorbic acid intake ..	29.7	30.2	2.0	1.7	—	—	17.3	10.5	6.5	1.0	1.3	—	100.2
<b>December—</b>													
Mean consumption per capita per week (ounces) ..	13.4	24.5	9.3	7.0	—	54.2	24.5	6.9	10.2	3.5	3.5	48.6	—
Ascorbic acid (milligrammes) ..	19.1	19.7	2.2	1.0	—	42.0	14.6	6.7	5.4	0.5	0.6	27.8	69.8
Percentage of total ascorbic acid intake ..	27.4	28.3	3.2	1.4	—	—	21.0	9.6	7.7	0.7	0.9	—	100.2

**South Australia.**—In South Australia the amounts of citrus fruit consumed and the seasonal variation in the value for potatoes greatly influence the picture for the total daily intake of ascorbic acid. The peak intake is in November, while the lowest intake is in April. The general trend in total ascorbic acid intake in South Australia is on much the same pattern as in Victoria, but the wave is smoother.

**Queensland.**—The seasonal variation of ascorbic acid intake is pronounced in Queensland, and is influenced not only by the important citrus group as in other States, but also by the tropical fruits. These two groups contribute the

greatest quantities at the same period, so that there is a considerable difference between the peak in October and the trough in April.

**Comparison Between the States.**—The results from all States show that there is a pronounced seasonal variation in the ascorbic acid intake contributed by fruit and vegetables, and that there is a strong similarity between the States. Victoria and South Australia show very much the same trend, although the total intake is higher in Victoria for most months of the year. The peak intake in these States occurs in November. The trends are similar for New South Wales and Queensland, although in the

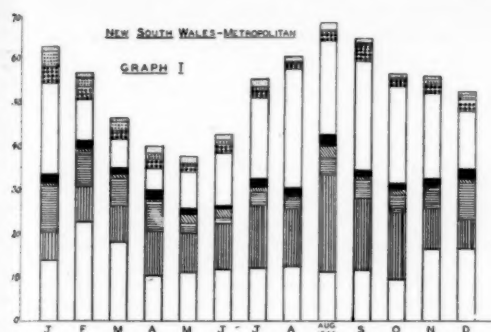


FIGURE I.

latter State the range is greater and the peak occurs in October, while in New South Wales the peak is in September. The lowest intake occurs in all States during April and May.

**Comparison with Ascorbic Acid Intake in 1944.**—The data, collected during the 1944 food consumption survey of the metropolitan areas of New South Wales, Victoria, South Australia and Queensland, have been treated for the calculation of the ascorbic acid contributed by fruit and vegetables toward the total daily intake. Because of the method of treatment the figures are comparable with the results obtained from the 1938 food consumption survey. The relevant data are shown in Tables II, III, IV and V and Figures I, II, III and IV.

It can be seen that in 1944 there was an increase in the total amount of fruit and vegetables consumed and in

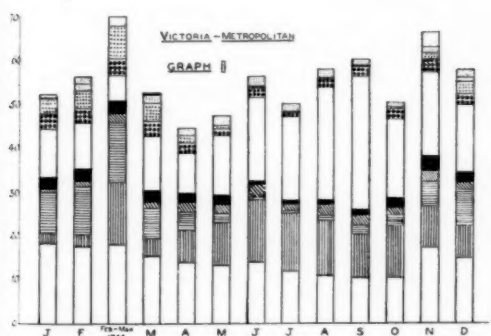


FIGURE II.

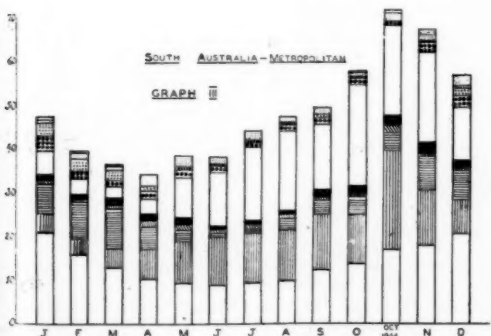


FIGURE III.

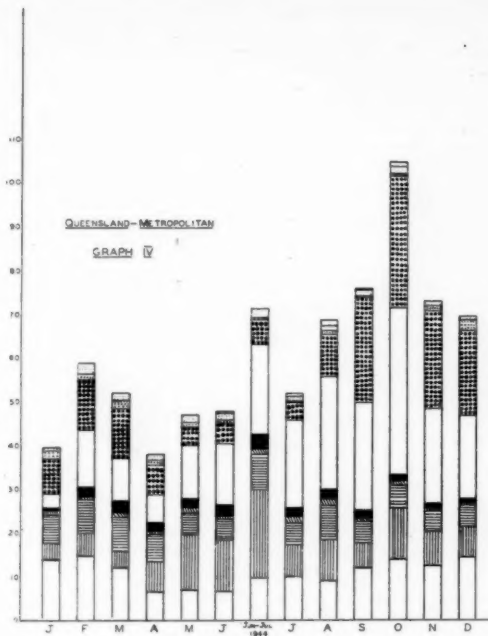


FIGURE IV.

the total intake of ascorbic acid from these sources. The *per capita* consumption of green vegetables was significantly greater in 1944 than in 1938. The increased fruit consumption is provided by pome and soft fruits, but these, owing to their low ascorbic acid value, contribute little to the total daily intake.

Some of these changes are probably due to the rationing of other foodstuffs and to the increased interest shown by the population in the home production of vegetables in victory gardens.

#### Discussion.

The results of studies undertaken in other countries also show a seasonal variation in ascorbic acid intake. Several nutrition surveys in rural districts of northern European countries prior to 1938 revealed that deficiency diseases, especially scurvy, occurred in the spring.<sup>(5)(6)</sup> Results of a nutrition survey conducted in a rural district of North Carolina over the seasons of 1940 and 1941 show a surprisingly low ascorbic acid level in the blood in the spring.<sup>(7)</sup>

Monthly reports issued by the British Ministry of Food on Wartime Food Consumption during 1943 and 1944 reveal a seasonal variation in ascorbic acid intake. The peak consumption appears to be in September, the middle of the British autumn, while the lowest intake is in April, the middle of the spring. The increase in July is influenced by the higher estimated ascorbic acid content of new potatoes compared with those of the winter period; this value is maintained during the production period in August and September.

From these reports it may be concluded that in countries where a severe winter is experienced, the period of lowest intake of ascorbic acid is during the spring. This can be explained by the facts that the main sources of ascorbic acid throughout the year are potatoes and other root crops (for example, turnips *et cetera*), and that storage reduces the vitamin content of these during the spring. At this time of the year the production of green vegetables is at a minimum. Citrus fruits must be imported, with consequent minimal consumption especially by working-class populations.

This can be contrasted with Australian conditions, where the climate is more temperate and in some parts tropical to subtropical; spring is the period of growth for green vegetables and of citrus fruit production. These foods make valuable contributions to the total ascorbic acid intake. In autumn potatoes have a lower value, citrus fruits are in short supply and the production of green vegetables is low, so that this is the period of lowest intake.

GRAPH V  
KEY

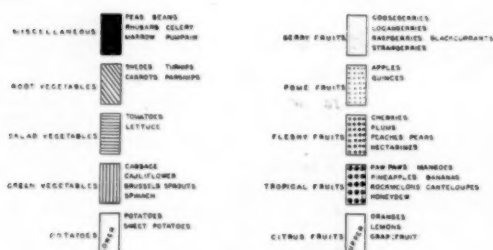


FIGURE V.

#### Conclusion.

Calculation of the ascorbic acid contribution made by fruit and vegetables, from data collected from a food consumption survey covering the metropolitan areas of four States of Australia, shows the period during which ascorbic acid deficiencies are likely to occur.

Infantile scurvy may manifest itself in the months of February, March and April, when oranges are in short supply, while the suspect period for cases of scurvy among adults is during the months of April and May, when the total intake from all fruit and vegetables is low.

This study has also shown a need in Australia for an increased production of those fruits and vegetables which are a rich source of ascorbic acid and which mature in the autumn. The need could not be met by an increased production of varieties of oranges now being grown. This would serve only to increase the total ascorbic acid intake during the late winter and spring, at a period when at present the total intake is already at its maximum. A happy solution, if practicable, would, of course, be the production of citrus fruit which matures in the summer and autumn.

#### Acknowledgements.

The preliminary treatment of the basic data was undertaken by the third year children of the Canberra High School as a special wartime effort, when information on the consumption of vegetables in Australia was needed for the planning of wartime production goals. Some of the earlier statistical treatment associated with this work was carried out by Miss C. Francis, of the staff of the Australian Institute of Anatomy.

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## THE BASIS OF POST-OPERATIVE TREATMENT IN APPENDICITIS AND PERITONITIS: FOLK-LORE OR PHYSIOLOGY?

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Bachelierus: "*Clysterium donare*  
*Postea seignare*  
*Ensuita purgare*  
*Reseignare, repurgare et reclysterisare.*"

Five or six hundred people are killed every year in Australia by appendicitis. Most of the victims are young and strong; many, the breadwinners of young families. Many of them are killed through ancient and primitive superstitions, which reach out from the mists of antiquity and interfere with the application of modern knowledge.

Twenty-five years ago, when a student, I watched patients with peritonitis, propped up against their pillows, the head dropped back, the pinched face, turned sideways at intervals to allow the regurgitation of dark brown offensive fluid, the swollen abdomen. I remember the vain hopes that the bowels would act. It was said that if this happened, the patient would recover. Failure had already met the best therapeutic efforts—the dose of castor oil, the hourly grain of calomel, the enemata of varied mixture, the pituitrin, eserine and strychnine. But efforts were continued, in spite of failure. That the constipation and distension might be effects rather than causes was an idea to be suppressed when treatment was planned.

Years later, as a young surgeon, anxiously watching my patients after appendicectomy, I noted with pleasure their well-being on the day following operation. But on the second or third day the appearance of well-being had departed. The abdomen was uncomfortable. I feared the onset of peritonitis, and that my patient would soon present the picture which had horrified me years before. But the nurse would whisper: "It is only the aperient, sir; he had it a few hours ago." The aperient in thirty-six to forty-eight hours, followed by an enema, was hospital routine. But the appearance of the patient, and my own anxiety, raised questions. Does the patient recover on account of such treatment, or in spite of it? Is the distress a danger signal? Was it not Hilton who described pain as "the Monitor"? Though most patients weather the storm successfully, is it not possible that in some the intestinal commotion converts a subclinical peritoneal infection into major peritonitis, by interfering with natural defence mechanisms? If the great healing agency, rest, is helpful in the severe and advanced cases described by Sydenham, Graves and Stokes, Ochsner, Sherren and Love, would it not be helpful also in the less severe, whether operation is or is not performed? If a therapeutic principle is followed in one set of patients, why should it be not only neglected, but even grossly violated, in another set? Did not Hugh Owen Thomas teach that "inflamed and injured tissues need rest"? Hilton's "Pain the Monitor" was followed by "Rest the Cure".

The greater the freedom and the more active the normal movements of a part, the greater is the relief provided by the appropriate splint, mechanical or otherwise. The injured or inflamed joint, and the inflamed iris, provide illustrations. Can a physiological splinting be applied to the intestines, and would such a splinting in the post-operative period improve operative results?

#### Is Rest Needed?

Even when the acutely inflamed appendix is unruptured, the wall of the ileum and caecum is frequently red, thick and edematous, with fibrin on its surface, and surrounded by heavily infected fluid. A part of the bowel may be flaccid and almost devitalized, sometimes gangrenous, when it has lain in contact with a gangrenous appendix. After an interval appendicectomy, the ileo-caecal loop suffers from inflammation due to trauma, the degree depending upon the difficulty of access and the skill of the surgeon. After vigorous handling the bowel loses its



sheen, presents a ground-glass surface and is red and edematous, with petechial hemorrhages throughout its thickness and small subserous hematomata. In this state it is severely handicapped in its battle against infection, and the combination of trauma and infection not infrequently leads, even when the appendix is unruptured, to gross inflammation, affecting not only the peritoneum but the full thickness of the bowel wall. Such inflammation does not resolve in one or two days. The affected loop is unfitted to carry on the duties of digestion, absorption and propulsion. If left to itself it will remain completely at rest for days, usually five to seven, sometimes more. An intestinal obstruction, physiological and protective, is a part of the natural healing process. But no harm need result. If left to themselves, the stomach and the upper, unaffected coils of intestine will cooperate, rest quietly, and refrain from driving a stream of material against the stricken loop.

In 1906, Cannon and Murphy showed that when the intestines are injured by incision, handling or ligation of their vessels, the emptying of the stomach and the opening of the pylorus are inhibited. The delay is least when handling is gentle and under normal saline solution or within the abdomen, greatest when handling is rough and in the air. They found that "there is a striking coincidence between the duration of the delay of the discharge from the stomach, and the period of primary cementing of intestinal wounds".<sup>(1)</sup> In 1909, Cannon and Hedblom showed that inflammation produced in the colon by the application of chemical irritants "notably retards gastric discharge and delays the movements of food through the small intestine".<sup>(2)</sup> In 1914, L. G. Cole, on the basis of radiological studies, stressed this link between gastroduodenal emptying and the ileo-caecal region.<sup>(3)</sup> In 1941, Douglas and Mann showed that irritation of the peritoneum by Lugol's and other solutions produced prolonged intestinal inhibition mediated by the splanchnic nerves.<sup>(4)</sup> The rest period claimed by the alimentary tract of man is longer than that claimed by the dog's, just as recovery after laparotomy is very much slower in man, requiring weeks, while in the dog it requires but a few hours.

The quiet cooperation of the upper parts of the alimentary tract fits in with the defensive measures at the site of the disease, the endeavour to shut off the inflammation, destroy the bacteria and repair and restore the parts. In referring to such a basic mechanism, John Hunter<sup>(5)</sup> wrote:

Of the uses of adhesive inflammation. . . . It may be looked on as the effect of wise counsels proceeding from a consciousness of imperfection: nature is taking all the defensive precautions possible, for in all cases we shall evidently see it answer wise purposes, such as checking the suppurative inflammation, by making parts adhere which must otherwise fall into that state.

Adhesions may produce a late intestinal obstruction, but such cases are rare compared with the great number of patients who suffer localized peritonitis. Even after abscess formation the adhesions finally become few and flimsy. The surgeon who operates three months after the disappearance of an "appendiceal mass", is often amazed at the capacity of the peritoneum to restore its structure with scarcely a trace remaining of its recent victory. Contrast Hunter's conception with the following advice given in an authoritative article, published by request, in *The Lancet* in 1925:<sup>(6)</sup> "I believe if the bowels are kept mildly wriggling for a few days after operation it prevents a thin film of lymph attaching one piece of gut to another from becoming a permanent organic adhesion, and thus causing obstruction in a week or two." To achieve "mild wriggling", three grains of calomel were given twenty-four hours after operation—all in one dose, so that it could be repeated if the stomach rebelled. This was followed by *Mistura Alba*, a turpentine enema, pituitary extract and eserine. What a travesty of basic principles! One may, with as good reason, pump-handle the acutely inflamed elbow joint with a view to preventing stiffness, or treat acute iritis by repeated flashes of bright light.

The healing influence of rest in the alimentary tract is well illustrated by the improvement in a patient suffering

from colitis or diverticulitis which follows an ileostomy or colostomy.

The importance of rest is stressed by the ill effects of activity. After operation for gangrenous perforated appendicitis with peritonitis, the temperature usually returns to normal in four to six days (Figures I and II). Note the temperature peak on the first day, when no aperients and enema have been given. Very often the temperature and pulse rate rise when the bowels act, whether the action is spontaneous at the end of the first week (Figure III) or induced at an earlier stage by aperients (Figures IV and V). Note the temperature peak on the third day, following the giving of aperients and an enema. Abdominal discomfort and sometimes vomiting follow the aperient and enema, and in some cases these do not subside, but merge into a serious post-operative complication. Such cases of severe abdominal crisis following expulsive therapy on the second or third day are at times described in the literature. But the authors fail to see the implications, and instead of recognizing the need for gentler after-treatment, they describe a dramatic intervention, the Miller-Abbott tube, an enterostomy, or a course of some injection or other.

A patient whom I examined had an interval appendix removed, and progressed well until the third day. He then had several loose bowel actions, the onset of an attack of gastro-enteritis which was epidemic at the time, and which had attacked other members of the patient's household. Peritonitis then began in the right iliac fossa, and finally killed the patient.

#### The Background of Post-Operative Alimentary Management.

Different textbooks advise contradictory methods of bowel management. The roots of the conflict go deep. The control of the alimentary tract is bound up with the ingrained superstitions and hereditary prejudices of the race. Primitive man looked upon disease as the work of evil spirits or a manifestation of the displeasure of gods. Remedies were in the hands of magicians and sorcerers. As a manifestation of their power, what could be more impressive than a good dose of elaterium or scammony or colocynth, all used in the time of Hippocrates.<sup>(7)</sup> There was not much else with immediate impressive effect, apart from bleeding and emesis. Thus, disturbance at will of the alimentary tract became the visible evidence of great medicine. In addition, I believe in obedience to the teachings and example of the ibis, the bowels were attacked from behind. The cult of the enema became an integral part of savage and civilized ritual, and has survived the passage of the centuries. In a wander-year in Central Europe I found a sumptuous sanatorium with uniformed attendants, in which colon lavage was the chief attraction. The patient, with enema tube in place, was submerged to the neck in a bath and fixed on a saddle. With the help of dials and levers, the lavage was carried out at varying pressures, so adjusted that the pressure in the colon was equal to the pressure in the bath, and a glass section in the tubing enabled the patient to enjoy the impressive sight of the effluent, the evil coming out. This machine is the lineal descendant of the reed and bladder of the primitive medicine man, and of the great brass syringe of the mediæval apothecary. The same end, the removal of poisons from the system, was achieved by the surgical operations of Lane and the biological methods of Metchnikoff. As the world grew, the idea that a daily bowel action was necessary to health became firmly fixed. Mothers and grandmothers take great care to impress this belief upon children, and the daily "duty" is more rigorously enforced than the daily prayer. Should the bowels falter, should they vary the rhythm of output in accordance with the quality and quantity of intake and other variables, they are accused of constipation. They are then purged, and if, in the following day or two, they fail to produce the usual stool, the purge is repeated. Thus it goes on, and there are many people who produce only stools which are liquid or of custard consistency. These people leave no responsibility to their bowels. And then the advertisers! Subtle men, well trained in the psychology of their art, knowing human foibles and playing upon

them! They suggest that their particular aperient cures various diseases, and even offers a means of escape from the tiredness, the *ennui* and the minor aches and discomforts incidental to life. But the surgeon may ask: "What has this to do with me? I am above such foibles." This is what all people say, of themselves. But the advertisers know differently. Has no surgeon ever given post-operative injections of pituitary preparations or parasympathetic stimulants after reading of them in the illustrated back pages of the medical journals? The wholesale druggist knows how his "turn-over" responds to advertisement.

Another tendency is to overeat, regardless of circumstances, in order to be strong. Familiar to the general practitioner and paediatrician is the mother who strives to "build up" her offspring by piling his plate with heaps of food, far beyond his needs and capacity. Her child is well nourished and full of energy, but she says: "The only trouble is, I have never been able to make him eat." Sometimes the child, surrounded by a circle of anxious adults trying to coax him to eat another mouthful, will take advantage of the situation, rule the household and even become a problem child. Sometimes a mother ignores instructions and feeds a child before bringing it for minor operation and anaesthesia, in order, as she explains, "to keep its strength up". In the treatment of gastro-enteritis in children one of the difficulties is to prevent the mother from giving foods long before they can be tolerated by the sick child. And so on through life. The physician has frequent occasion to reduce the victuals of middle-aged and elderly folk. Not without reason has it been said that the platter kills more than the sword.

It is too much to hope that surgeons should have escaped these deeply ingrained tendencies. Moreover, in past ages, they saw patients with abdominal pain, vomiting, distension and constipation. Death was often the end. But in some cases the bowels acted and the patients recovered. How easy to imagine that these recovered because their bowels acted! Treatment was therefore directed towards forcing a passage through the closed bowels. Aloes, scammony, jalap, colocynth and calomel, in all sorts of combinations, did their best, or worst, for hundreds of years. No wonder Sydenham wrote of ileus:

Very formidable is this affection, and deadly does it appear to almost all who have contemplated it. . . . The contents of the bowels are passed on into the belly and not towards the rectum. They make towards the throat and regurgitate. Purgatives taken by mouth are suddenly disgorged by vomiting, and sharp clysters become emetics.

Bullets and quicksilver, lead pills and musket balls were added, but the results were not improved.<sup>(6)</sup> Not deterred by the ghastly sequelae, present-day surgeons continue the methods, with modern refinements.

In 1891, Mansell Moullin in his textbook credited Wylie, Tait and Greig Smith with the advocacy of saline purges after abdominal operations, on the ground that "a purge, followed by a turpentine or hot water enema, will carry off immense quantities of gas and fluid and relieve the congestion of the abdominal vessels". The mortality rate is not recorded.

In 1900, Lockwood, in his book on appendicitis, advised after-treatment within a few hours of operation, firstly by the rectal tube, then by an enema of soap and water, with half an ounce of castor oil and half an ounce of turpentine, or an enema of asafœtida or of rue. "These remedies seem very harmless. They may make the anus and rectum sore, or excite vomiting, or accelerate the heart for a little time." Then the purges were given, particularly calomel in five or ten grain doses, and preferably the "cheaper and less pure samples". "In sudden and violent appendicitis", the calomel is given "as soon as the shock of the operation has passed away". To illustrate the great efficacy of this treatment he describes in detail the histories of two patients who recovered after the removal of non-perforated appendices, gangrenous at the tip. He believed that the recovery was due to the calomel, and states: "It is a question whether, in desperate cases, more drastic

purgatives than calomel might not be justifiable. I have not yet resorted to croton oil." Lockwood does not record his mortality rate.

This terrible tradition of after-treatment has been carried on by more modern authors—for example, Lockhart-Mummery, 1909; Thomson and Miles, 1920; F. Jeans, 1925; Kirschner, 1933; Miles and Wilkie, 1936; Romanis and Mitchener, 1937; Bowen, 1937; Rutherford Darling, 1938; Raven, 1942; and Atkins, 1942. The editions quoted may not be the latest, but they still influence after-treatment. Their teaching may be summed up in the words of Lockhart-Mummery, who made the following statement:

It is most important, after all operations for appendicitis, to get the bowels to act as soon as possible. An enema should be administered on the day after the operation, and if it fails to act should be followed by a dose of salts or castor oil.

Rutherford Darling<sup>(7)</sup> explains that "the organisms in the stagnant faeces multiply enormously, and the patient slowly becomes poisoned by the absorption of their toxins, hence a proper evacuation of the intestines is necessary as soon as possible to stop this poisoning".

But the hundred of patients to whom I apply the method of alimentary rest remain comfortable and healthy in every way, without a bowel action, for six or seven days after the usual appendicectomy, and for three weeks after the excision of pilonidal coccygeal sinuses. In the less severe cases the patients frequently leave hospital on the fifth or sixth day, well and comfortable, before their bowels have acted. Seeing these patients, it is hard to understand why the purgative methods could ever have become established. Sir W. Langdon-Brown wrote: "It is not fanciful to see in this idea of expulsion an unconscious persistence of the more primitive idea of disease as due to demoniacal possession or influence." As civilization dawned, the place of the demon was gradually taken by the "ill-humours", black bile and melancholy of Hippocrates and Galen. I can find no other explanation. If inquiry is made from surgeons who use the routine aperient, some say they are using the method advised in a book, other say: "I am afraid to leave the bowels unopened", or "I feel more comfortable when the patient's bowels act". Such unreasoning emotion is not a secure basis for surgical methods.

#### Psychological Conflict and Therapeutic Confusion: Modern Textbooks.

In some writings, a struggle may be witnessed in the minds of the authors. The physiological conscience strives unsuccessfully to free itself from traditional shackles. Confusion results. Thus, Lockwood pointed out in 1900, in regard to the treatment of acute appendicitis, that it is not possible clinically to exclude ulceration, gangrene and even perforation of the appendix, perhaps with intestinal obstruction.

In many [cases], a dose of sulphate of magnesia is not likely to do any good and may do harm. But it is doubtful whether purgatives do as much harm as some suppose. If they act, they may do good. But sometimes they fail, and only cause pain and distress, besides being a formidable complication when operation is performed. I am, therefore, in the habit of relying upon enemas. The ordinary soap enema, combined with half an ounce of turpentine, and half and ounce of castor oil, seldom fails. I can recall no case in which enemas have done harm beyond causing discomfort, or vomiting or erythema. If a purge be necessary a dose of calomel, gr. iii-v, would be safest.

Maingot in "Abdominal Operations", 1940, advises the giving of no solid food till a normal bowel action has occurred on the fifth or sixth day, and the avoidance of post-operative purgatives. But he advises the use of "Esmodil", a powerful intestinal stimulant, for retention of urine, and from the third day large doses of paraffin and pituitrin and glycerin enemata, until a good bowel action has occurred. Then purgatives are given, and the giving of paraffin is continued. Why, after near-starvation and a "good bowel action", should purgatives be given and continued? Similar advice is given by many writers

and followed by many surgeons. An intestinal rumble felt by the patient or heard by the surgeon, or the passage of a little flatus, is said to "constitute a demand either for temporary assistance by pituitrin injection and turpentine washouts, or by initiating a normal routine with a purgative" (Tyrell-Gray). This curious association, the normal routine with the purgative, reveals the survival of age-old superstitions in modern surgery. Why not a little more patience instead of pituitrin? Perhaps the rumble came from a healthy coil above or below the most affected loop. When, a few days after fracture of the leg, the patient willingly twiddles his toes or sits up in bed, we do not remove the splints from the leg and prescribe abnormally vigorous active exercises. The analogy between the inflamed serous membrane and the fractured bone was used by Hilton.

Hamilton Bailey, in "Emergency Surgery" (1940), refers to pituitrin as being good for the prevention but bad for the treatment of "paralytic ileus". How can this be? He states: "Although it is admittedly intensely worrying if the bowels do not act, I am convinced that it is harmful to the patient to give repeated enemata." After this he prescribes a turpentine enema, to be repeated on the following morning. This confusion can be avoided if the surgeon ceases to worry "intensely" about the bowels. If he would only trust the bowels and understand them better he would not need to relieve his own mind by measures which he describes as harmful to the patient.

Grey Turner (1943) writes as follows of paralytic ileus: "It is only the repeated use of purgatives which prove ineffective that is so physically and mentally distressing." He then advises castor oil, which, if vomited, is followed by half-grain doses of calomel every half-hour for three hours, and then, if there is no result, an enema.

Such contradictions indicate a disorientation, resulting from a conflict between therapeutic principle and the sub-conscious force of inherent notions and ancient folk-lore—the age-old struggle between good and evil. Salvation can be achieved only by holding fast to principle and making it the consistent guide of conduct. More than lip service must be paid to "Pain the Monitor, Rest the Cure". Other inconsistent books order aperients or pituitrin for routine post-operative treatment—that is, when subclinical peritonitis is present—but forbid them if the peritonitis is clinically obvious (Romanis and Mitchener, 1937; Bailey, 1940, under "Paralytic Ileus"). Others forbid aperients, but order enemata, pituitrin and eserine (Rowlands and Turner, 1936; Maingot, 1940). They have probably never watched a barium enema under the fluoroscope and seen the rapidity with which it flows to the ileo-caecal loop and the powerful and widespread contractions when the douche can be raised to a height used in the wards for evacuant enemata, nor read of the cases in which the fluid has burst through the appendiceal stump.

Another group omits a description of after-treatment in the simple case, thus sending the patient back from the operating theatre without any attention to a most important part of his surgical management (Carson, 1927; Russel Howard, 1933; Handfield Jones and Porritt, 1938; Hamilton Bailey, 1938 and 1940; Grey Turner, 1943). Some of this group discuss the steps to be taken when "paralytic ileus" has appeared.

Another group shows an enlightened viewpoint, but does not go far enough. Devine (1940) warns against purgation, but makes no mention of the method of feeding. Rose and Carless (1943) discuss the post-operative feeding, but give no directions in regard to aperients and enemata. None of these authors touches upon the psychological management.

But the modern textbook has more to answer for. Much of the violence inflicted upon the ileo-caecal loop after appendicectomy is due to false and worrying notions of paralytic ileus and to fussing about bowel evacuation. Rose and Carless (1943) refer to paralytic ileus as an interference with the normal waves of peristalsis, which "usually starts upon the second day", and then all the weapons of expulsive therapy are paraded. There is something basically wrong here. The normal waves of peristalsis are first interfered with, not upon the second

day, but from the very moment that the ileo-caecal loop is handled, or even before. Hamilton Bailey (1940) recognizes "paralytic ileus" within the first three days, and becomes intensely worried if the bowels do not act within this time. If only it was realized that the ileo-caecal loop after appendicitis and appendicectomy will rest for a week if left to itself, and that this rest, if respected, will do no harm, then patients would be more comfortable and safer and surgeons would bear a reduced burden of worry. But when the surgeon sees this natural tranquillity, mistakes it for the boggy of "paralytic ileus" and shouts the alarm, and the normal bowel above is made to batter against the sick bowel below, then the harm begins.

#### Paralytic Ileus?

Bérarde: "C'est notre inquiétude, c'est notre impatience qui gâte tout; et presque tous les hommes meurent de leurs remèdes, et non pas de leur maladie."

The student, searching in his books for a clear conception of paralytic ileus, is doomed to failure. The name is given to a symptom which masquerades as a disease. The "disease" attacks patients on a certain post-operative day, variously fixed by various writers. It is described, as "dyspepsia" was described 100 years ago, without a clear conception of its underlying pathology. "Ileus" is an ancient term with no precise meaning.

I believe that cases of so-called "paralytic ileus" fall into three groups.

1. *Intestinal Paralysis of Neurogenic Origin.*—This comprises a small group, which may be eliminated from the present discussion. Painless abdominal distension occurs, and the bowels fail to act after a retroperitoneal injury—for example, an operation upon the kidney—or, as in one of my cases, after a fracture of the crest of the ileum, or after injury to the spine, or to a limb, perhaps under treatment in a plaster jacket or spica. It is probably due to a disturbance of the nerve supply, either direct through retroperitoneal hæmorrhage, or reflex. The reflex disturbance is akin to the retention of urine which may follow herniotomy or hæmorrhoidectomy.

2. *Intestinal Rest.*—This second group includes the great majority of cases. In this are the patients who have had an intraperitoneal operation, usually an appendicectomy. The inflamed ileo-caecal loop, unfit for duty, craves for time in which to heal itself. The natural reparative mechanisms are brought into play—the adhesive inflammation and the quiet cooperation of the stomach and upper coils of intestine. Only in rare instances does distension become pronounced. If the surgeon understands, all will be well. But if he has arbitrary and baseless notions concerning the hour at which aperients must be given, and if he leaves the dietary management to the whims of the nursing staff, and if he imagines that the continuance of intestinal rest beyond a certain fixed day indicates a "disease" called paralytic ileus, then God help the patient. The feeding, the purgative, the enema, the pituitrin *et cetera* will soon change the harmless quiet into a dangerous condition, with distress, vomiting and distension. In the great majority of cases, so-called "paralytic ileus" represents nothing more nor less than the normal reparative efforts of the organism, misunderstood, mismanaged and violently meddled with.

3. *Intestinal Obstruction.*—This group differs from the second group, chiefly in degree. It includes cases in which the peritonitis is clinically obvious, and bacterial infection outweighs operative trauma as a cause of the inflammation. Obstruction is due to a localized softening and collapse of a segment of bowel wall, or to kinking by a fibrinous adhesion. Patients in the second group may, if mismanaged, become third-group patients. But, if they are properly managed, even the third-group patients get well with very little distension, discomfort or vomiting.

Above all, distension must not be taken as an indication for expulsive therapy.

#### Protesting Voices.

Monsieur Purgon: "On a fait refus de prendre le remède que j'avois prescrit. . . . Un chylère que j'avois pris plaisir à composer moi-même, inventé et formé dans toutes les règles de l'art . . . et qui devoit faire



*dans des entrailles un effet merveilleux! . . . le renvoyer avec mépris . . . c'est une action exorbitante . . . un attentat énorme contre la médecine . . . un crime de lèse—Faculté."*

From time to time, voices (besides that of Molière) have been raised in protest against the prevailing, indiscriminating purgation. Thomas Sydenham condemned the use of purgatives in "ileus", until the pain and vomiting had wholly ceased for two or three days. Meantime he gave twenty grains of salts of wormwood (chiefly potassium carbonate) twice a day, and a few spoonfuls of mint-water half-hourly, and warmth was supplied by a live kitten "continually lying on the naked belly". As the patient improved he was given a few spoonfuls of chicken broth twice or thrice a day. For "the iliac passion" Sydenham gave an aperient, but, if this was unsuccessful, he gave repeated doses of laudanum, until the vomiting and pains were allayed and the intestines "perfectly quieted".

In 1830, Graves and Stokes reported their cases of peritonitis. The early patients, treated by expulsive methods, invariably died. They therefore tried the reverse treatment, opium every two hours. The first patient thus treated died, but not from peritonitis. The symptoms of peritonitis disappeared and the post-mortem examination revealed no trace of it, but pneumonia at the base of the right lung and a huge liver abscess. Encouraged by this, they next tried opium on Michael Donegan, aged twelve years, who was admitted to hospital ten days after the onset of severe abdominal pain, and was suffering from generalized peritonitis, no doubt due to appendicitis.

Large doses of opium were given every hour, and mercurial frictions used over the belly. On the next day, a great improvement was perceptible; the pulse was full and soft, the extremities were warm; the face had lost the hippocratic expression; he could bear pressure on the abdomen, and the tenesmus had ceased. The patient who, on the day before, was nearly insensible to external objects, expressed great relief and confidence of recovery. The same treatment was persevered in for the next twenty-four hours, and on the following day all symptoms of peritonitis had completely subsided. The belly felt natural; there was no tenderness; the pulse was good, and the patient declared himself well. We now unfortunately changed our plan of treatment; the opium was omitted, and a gentle saline laxative exhibited; this produced four evacuations, followed by a return of all the symptoms of abdominal inflammation, under which he speedily sank.

The autopsy showed collections of pus in the peritoneal cavity and a pericaecal abscess which had perforated the caecum, as described by Fitz years later in his epoch-making paper on appendicitis. Graves and Stokes<sup>(1)</sup> described other cases, and concluded: "We would then recommend the use of opium in large doses in cases of peritonitis from perforation."

At about the same time, John Abercrombie<sup>(2)</sup> wrote: "We have had evident reason to believe that, in several cases, in which the inflammation appeared to be subdued, the action of a purgative was immediately followed by a renewal of the symptoms." But some of his patients benefited by a laxative, and this is not surprising, seeing that enteritis and many other disorders were included under his terms "intestinal inflammation" and "ileus". The problem of which patient needed the purgative and which would be harmed by it could not be solved from the inadequate data then available.

The adaptation of the remedies to the individual cases in fact demands the utmost discretion; and it is impossible to lay down any general rules for it. There are some cases which yield at first to a powerful purgative, and there are others in which an active purgative is highly and decidedly injurious. A large dose of calomel will frequently settle the stomach, and move the bowels; but upon the whole, I think the best practice in general is the repetition, at short intervals, of moderate doses of mild medicine, such as aloes combined with hyoscyamus.

This method, the small dose frequently repeated, is evidently a compromise between the wish and the fear to purge. It is the offspring of the pathological ignorance prevailing at the time. But now, when we should know

better, it is still perpetuated in modern practice and in modern textbooks.

In 1871, for typhlitis and peritonitis, Wardell, in "Reynold's System of Medicine", advised opium, small quantities of easily digested food given frequently, and no purgatives. His words are worth quoting.

Constipation is another circumstance which in these cases generally obtains. A right and rational consideration of this matter is of cardinal importance, because the very wrong notion is sometimes entertained that the bowels must be moved, and under this erroneous reasoning drastic purgatives have been given, producing, as they were said to do, much mischief. The physician should bear in mind that constipation is not the cause, but often the effect of the inflammation, and that the indicated mode of procedure is first to subdue the inflammatory action, when in due time restoration of function will follow. To allay and mitigate peristaltic action—in other words, to give rest to the parts in a state of lesion—is to carry out the same principle observed in enjoining the disuse of the torn muscle, and in peremptorily excluding light in the treatment of an inflamed eye.

He concludes that "there is far greater liability to error in being too solicitous respecting the movements of the bowels than in leaving them to the effects of nature".

In 1886, Reginald Fitz,<sup>(3)</sup> in the classical paper which laid the foundations of our knowledge of appendicitis, pointed the way to those principles which should guide the medical management of the disease.

To keep the bowel quiet should be the first and last thought. Absolute rest in bed, liquid diet in small quantities often repeated, and above all, sufficient opium to neutralize the pains. . . . A cathartic or a laxative may be demanded by the patients or friends, and an enema be thought desirable as a diagnostic aid. It is to be remembered that these may be the means of at once exciting a general peritonitis. . . . They (the bowels) may remain bound for 24 days, yet the general health need not suffer. Recovery may proceed quietly, steadily, and without disturbance, and the appetite return long before the bowels are opened.

No word here of the bowel contents slowly poisoning the patient! Untold benefit would result if these words were printed in every textbook of surgery.

The inspiration of these pathologist-physicians and their evident appreciation of physiological processes, such as the gastro-ileal and gastro-colic reflexes, yielded a harvest of cures in the medical wards, as Sir James Berry has recently testified. But, as we have seen, their inspiration was lost upon surgeons. The surgeons brought the gift of operation, but the gift was tarnished by their forgetfulness of their own prophets, and by their blindness to the essential unity of the disease in its pre-operative and post-operative phases. There should be no contradiction between the principles followed in the different stages. In each, the *vis medicatrix naturæ* should be accepted as an ally, not attacked as a foe.

#### Elective Alimentary Rest.

Argan: "Que faire donc quand on est malade?"

Bérarde: "Il ne faut que demeurer en repos. La nature d'elle-même, quand nous la laissons faire, se tire doucement du désordre où elle est tombée."

Improved results may be obtained if modern operative practice is combined with therapeutic principles laid down by the older physicians of the school of Graves and Stokes, advantage being at the same time taken of modern physiological knowledge. By these means the inflamed and injured ileo-caecal loop can be rested, and at the same time the patient can be given adequate fluid and nourishment, if use is made of the stomach and of the enormous absorbing surface of the duodenum, jejunum and upper coils of ileum, and if at the same time these relatively unaffected parts are prevented from driving bowel contents downwards against the inflamed and resting loop. This "elective alimentary rest" may be achieved by a proper and sympathetic understanding of the following: (i) the above-mentioned work of Cannon and his followers; (ii) the gastro-ileal and gastro-colic reflexes which may disturb the motor, secretory and vascular activities of the ileo-caecal

loop when aliment enters the stomach, especially if it enters quickly or in bulk (Macewen;<sup>(13)</sup> Hurst;<sup>(14)</sup> Rutherford;<sup>(15)</sup> Rendle Short;<sup>(16)</sup> Beuttenmüller;<sup>(17)</sup> White, Rainey, Monaghan and Harris;<sup>(18)</sup> Lehman and Gibson;<sup>(19)</sup> Douglas<sup>(20)</sup>); (iii) the effect upon the normal individual of taking nothing but water for five days, as described by Carlson;<sup>(21)</sup> and (iv) the relative degree of absorption of various foodstuffs at various levels of the gastro-intestinal tract (Bainbridge and Menzies;<sup>(22)</sup> Alvarez<sup>(23)</sup>). It must be remembered, too, that the powerful hunger contractions of the "empty" stomach, which have been raised as an objection to the methods of alimentary rest, are now known to be artefacts, and due to the attempts of the stomach to expel the foreign body, the distended balloon, within it (Alvarez<sup>(23)</sup>). (This physiological background has been described in more detail by myself in *The Medical Press and Circular*, May 1, 1946.)

Knowledge of physiology must be combined with an appreciation of the psychology of the patient and his untutored fears. He must be reassured and told that the delay in bowel action is "according to plan", and that the little thirst and hunger are worth while, because they aid the healing and make for safety.

Detailed typed instructions are given, as follows:

#### *Treatment after Appendicectomy with no Peritonitis.*

**First Day:** One ounce of fluids is allowed, to be given every hour and sipped slowly. Fluids allowed are water, black tea, black coffee, sweetened to taste with glucose. Glucose-barley sugar to be sucked. The tea and coffee may be flavoured with lemon juice, which must be strained.

**Second Day:** The same fluids are given in two-ounce quantities.

**Third Day:** The same fluids are given in three-ounce quantities. Strained soups, strained fruit drinks and "Marmite" and "Bovril" may be given.

**Fourth Day:** Thin bread and butter or arrowroot or "Sao" biscuits are added. Fluids increased to four ounces.

**Fifth Day:** Egg or fish or brains are added.

**Sixth Day and Following Days:** Diet continued as on fifth day. Milk, meat, fruit and vegetables may be added when the bowel acts, but not before the sixth day, even if the bowel has acted.

Morphine is given if there is much pain on recovery from the anaesthetic.

No aperients are allowed. No enema is allowed.

No hypodermic injections for retention of urine are allowed. No pituitrin, eserine, etc.

If antacid powders are required for a peptic ulcer, they should not be given until convalescence from the operation is complete. Otherwise, fecal impaction may occur.

The principle is alimentary rest until nature provides a bowel action.

The aim is to allow the inflamed and traumatized ileo-caecal region to rest, and not to disturb, but rather to assist the immobility which nature attempts after an operation on the bowel or any other part. Meantime, the stomach and upper coils of the small intestine may be used as a route for fluid administration. (In very hot weather, when the patient is perspiring freely, the upper coils absorb fluid more readily. Each dose of fluid may therefore be increased 50 or 100 per cent.)

The method is:

1. To avoid any foods with an indigestible residue (e.g., fruit and vegetables).

2. To avoid foods which need a good deal of digestion before absorption. Milk should be avoided, because the curds which form in the stomach demand a good deal of digestive and propulsive work on the part of the intestine. Jellies of the old-fashioned gelatin type should be avoided. They hurry the intestinal movements, and are of no food value. The newer glucose jellies may be given in small amounts from the fourth day.

3. To avoid big drinks. The entry of a large bulk into the stomach, even of water, tends to disturb the ileo-caecal region and excite strong peristalsis (the so-called gastro-ileal and gastro-colic reflexes). Fluids therefore should be sipped.

#### *Treatment after Appendicectomy with Peritonitis.*

In the more serious acute cases, when the appendix has ruptured, or when pus is present, the alimentary rest is made more strict by one of two methods. No

fluid is allowed by mouth; or, one ounce is given hourly, as on the first day, and this quantity is not increased until special orders are given. In the more severe cases it may be necessary to supplement the fluid intake by intravenous infusion. This is always necessary if gastric aspiration removes considerable fluid. Such cases are rare. The detailed treatment in these more serious cases should be under the detailed supervision of the surgeon. The fourth-day solids of the simple case must not be given till much later, and not without specific order, in the more severe case.

Spontaneous bowel action takes place about the fifth to tenth day in less severe cases, usually later in the more severe cases.

#### **Results in the Present Series.**

In the last twelve years these methods have thoroughly justified themselves by the saving of life and avoidance of morbidity. In this time I have personally treated 344 patients suffering from acute appendicitis in public and in private hospital practice. In 41 of these cases the appendix was ruptured and the peritonitis unlocalized. In many others, when the appendix was unruptured, severe purulent peritonitis was present. In nine cases a residual abscess developed. Two patients died from complications not arising directly from appendicitis—one through the aspiration of copious offensive fluid vomited during induction of anaesthesia, the other, an acromegalic, from uncontrollable diabetes, purulent bronchitis, and the effects of two bottles of whisky per day for years. There have been no deaths from appendicitis or from any of its complications. Neither "paralytic ileus" nor faecal fistula has occurred.

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## THE USE OF GAMMA GLOBULIN IN THE PROPHYLAXIS OF MEASLES.

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COHN and his collaborators in Harvard have been responsible for much fundamental research concerning the fractionation of human plasma, and their results<sup>(1)</sup> have been of great theoretical interest. These workers have investigated in detail clinical uses of many of these protein fractions in both medical and surgical fields.<sup>(2)(3)(4)</sup>

Through the courtesy of Dr. C. A. Janeway, we received a generous supply of  $\gamma$  globulin including standard commercial Fraction II preparations and several preparations from Fraction III. This material was produced in America under a contract recommended by the Committee on Medical Research between the Office of Scientific Research and Development and Harvard University.

### Protein Fractionation.

The proteins of human plasma may be divided into components by various technical procedures, the number and composition of the components so obtained depending on the type of procedure employed in the separation.

The physical methods, ultracentrifugation and electrophoresis are used primarily for the analytical study of plasma and the various fractions obtainable by chemical means.

The Svedberg ultracentrifuge enables the separation of serum albumin and serum globulin, according to their different rates of sedimentation; but as all the globulin molecules are of approximately the same size and shape they sediment as an apparently homogeneous group.

However, in the electrophoresis apparatus of Tiselius, the diffusion of an ionized solute, in this case plasma protein maintained at a constant pH, is governed in part by an electric field between two electrodes in a U-shaped tube. Hence the average distance a substance will diffuse depends on the ionic charge, and this in turn on the number, arrangement and type of ionizable groups in the molecule. Using this apparatus it is possible to separate plasma globulin into a number of fractions grouped into three primary classes,  $\alpha$ ,  $\beta$  and  $\gamma$  globulin.

All the practical methods for large-scale fractionation of serum or plasma depend on the differential precipitation of the proteins by salts, particularly ammonium or sodium sulphate or by appropriate concentrations of alcohol. The latter method elaborately controlled as to temperature, pH and salt concentration, has been employed by Cohn and his collaborators. Of the fractions so obtained, one contains the bulk of the  $\gamma$  globulin of electrophoretic analysis.

Many recent studies have shown that antibodies are essentially modified  $\gamma$  globulin so that isolation of this fraction makes it possible to concentrate the various antibodies in pooled human plasma. In practice material can be produced which when redissolved gives an antibody solution approximately 25 times as potent as the original plasma. As prepared for clinical use,  $\gamma$  globulin forms a clear colourless solution in saline; it contains about 16% protein; but in none of our cases did injection of it produce any local or constitutional reactions. As the globulin is stable to moderate heating it is possible during manufacture to destroy any infectious icterogenic agent present.

### The Role of Gamma Globulin in Measles Prophylaxis.

Gamma globulin is effective not by virtue of an antigenic stimulation, but because of its content of antibody. Hence the immunity conferred is passive and persists for only a few weeks after injection.

Globulin is employed prophylactically when one of two results is desired: complete though necessarily transient protection of the contact, or partial protection only.

In practice it is desirable to provide complete protection: (a) when the exposed child is under five years of age or is suffering from some disability making it more liable to a serious infection, or (b) when the individual is unduly exposed to secondary bacterial infection, for example, in the wards of a hospital for infectious diseases. If protection is successful the child remains fully susceptible to a subsequent measles infection.

When the child is over five years of age and otherwise healthy, the production of a modified attack is to be aimed at, the object being to reduce the severity and the risk of complications, but at the same time to allow the development of a permanent immunity to the disease.

In general the larger the dose and the earlier after infection it is given, the greater is the probability of preventing the threatened attack of measles. In the past, use has been made of pooled human serum for this purpose, and it has been customary to vary the time of administration according to the wish to modify or prevent the impending attack. We preferred to administer  $\gamma$  globulin at the earliest opportunity, but to vary the dose to produce one result or the other. For modification one intramuscular injection was given of one-fortieth of a millilitre per pound of body weight irrespective of age, and when prevention was desired, a dose four times this size. Intravenous administration of the product which we used was considered inadvisable.

By comparison, the dose of pooled human serum found to be effective by Brincker<sup>(5)</sup> and others was of the order of fifteen millilitres for a child of three years. McKhann,<sup>(6)</sup> using a concentrate of placental globulin,<sup>(6)</sup> was able to reduce the size of an injection of comparable effect; but local and febrile reactions were observed in many instances.

### The Melbourne Epidemic.

The measles epidemic had been in progress in Melbourne since the early months of 1945, and by October, when supplies of  $\gamma$  globulin were available, had burnt itself out in many of the suburbs and in those establishments where children were gathered together.

The majority of children in this series were seen in their own homes, and without exception a history was obtained that they had not previously suffered from the disease, but that during the past week and in most cases during the preceding two days they had been in contact with a patient in the infectious stage. In determining this point it was considered that a patient incubating measles became infectious to his contacts coincidentally with the development of coryza, cough, or the general malaise preceding the rash, whichever appeared first. In general, this occurred two or three days before the exanthem was noted.

An effort was made to visit the healthy, susceptible and presumably infected contacts as soon as possible after the rash had appeared in the patient, and in this way to inoculate these children within four days of their assumed first contact with the virus. No attempt was made to use globulin therapeutically, although its value in this regard has been suggested by results obtained in America.<sup>(7)</sup>

The degree of contact of a subject with an infectious patient was considered intimate only if the two children were constantly playing together, or were siblings not separated prior to the development of the infectious stage in one of them. An effort was made to select for treatment those children whose degree of contact was intimate, as it was felt that the incidence of infection among such individuals would be at least 75%.<sup>(8)</sup>

The degree of contact was denoted "moderate" in thirteen of the children given prophylactic treatment, of whom three developed a mild attack and ten showed no signs of infection.

The age of the children included in this experiment varied from four months to ten years, three children being less than eight months and ninety between eight months and five years old.

### Clinical Assessment.

The opinion has been expressed by several medical practitioners that the 1945 Melbourne epidemic of measles



was of a mild type. However, it seemed possible to recognize a distinction between a naturally mild attack of measles and an attack modified by globulin. As the epidemic was waning by October, no suitable control families were available for study. The degree of severity of the disease in the original case in each of the families concerned formed a standard with which some comparison of the disease in the contacts could be made.

The five signs or symptoms—cough, coryza, Koplik's spots, conjunctivitis and rash—were each assigned a value of 0, 1, 2, 3 or 4 according to the severity estimated; a case was not considered mild if the total of the values given the symptoms was greater than nine.

The attack of measles as modified by a previous injection of globulin was characterized by the almost complete absence of malaise. The average incubation period was fifteen days from the time of first contact with infection. The rash was often the first and only sign of the disease; frequently it was not typically morbilliform, but was represented by sparsely scattered macules, perhaps just three or four over the sternum, or a group behind each ear; occasionally it was more extensive. The cough rarely persisted for more than four days, and during this time did not occur with the frequency so common in untreated cases of measles. The temperature rose above 101° F. in six of the forty-six patients; in these six cases the pyrexia was present for only two or three days.

Fifty-seven children received 0.1 millilitre of  $\gamma$  globulin per pound of body weight; of these, forty-five developed no infection and twelve a typical mild attack. Forty-seven contacts received one-fortieth of a millilitre of globulin per pound, twenty-five suffering a mild attack of measles and nineteen avoiding the disease. The three patients in this survey who experienced a disease of moderate severity were among the group receiving the smallest prophylactic dose of globulin.

It is felt that these results are in agreement with the favourable opinion resulting from more extensive clinical trial overseas.

TABLE I.  
Results of Administration of  $\gamma$  Globulin to Measles Contacts.

Dose of Globulin in Fractions of a Millilitre per Pound of Body Weight.	Number of Cases in which Measles did Not Occur.	Number of Cases in which Modified Measles Occurred.	Number of Cases in which Measles of Moderate Severity Occurred.	Total.
$\frac{1}{10}$	41+4 <sup>1</sup>	12	0	57
$\frac{1}{30}$ to $\frac{1}{36}$	3	9	0	12
$\frac{1}{40}$	13+6 <sup>1</sup>	22+3 <sup>1</sup>	3	47
Total ..	67	46	3	116

<sup>1</sup> These patients were exposed only moderately to the source of infection.

#### Summary.

During a recent Melbourne epidemic of measles 116 children who were closely exposed to infection were given  $\gamma$  globulin prophylactically. Sixty-seven of these children did not develop measles, forty-six suffered a modified attack, and in three subjects the course of the disease was apparently unaffected by the globulin. No complication followed a modified attack.

#### Acknowledgements.

It is a pleasure to record the cooperation of the many private practitioners in Melbourne whose patients were the subject of this survey. We are grateful to Dr. C. H. Dickson and Dr. H. McLorinan for their assistance in the initiation of the work.

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#### Appendix.

The globulin used in our test comprised three batches:

A.—A standard commercial Fraction II preparation.

B.—A commercial Fraction III preparation.

C.—A Fraction III preparation from the Department of Physical Chemistry, Harvard Medical School, and the Antitoxin and Vaccine Laboratory, Massachusetts Department of Public Health.

It was a clinical impression that the results following the use of A and C were slightly better than those due to B; but the differences between the tabulated results were not statistically significant. Full details of our results have been sent to the Harvard group, and any detailed assessment of the value of different fractions will be made by them.

#### THE INSERTION OF THE TRANSFUSION NEEDLE MADE EASY.

By THOMAS A. MERTON,  
Perth Hospital, Perth, Western Australia.

It is generally conceded today that it is better to insert a needle into the vein than to tie in a cannula. In large hospitals where the insertion of needles is preferred, there are undoubtedly resident medical officers who have had difficulty in knowing when the needle is in the lumen of the vein. This is especially hard to tell if the patient is obese or collapsed, when the veins are difficult to locate. For these cases the Edwards vein seeker was invented, and indeed it must be an admirable aid. Unfortunately it is not available in most hospitals. With this in mind, I have evolved a technique with which even the most difficult of veins can be entered, and which, since I first used it at the Perth Hospital, has come to be generally used at that institution.

#### Technique.

The patient's arm is prepared with the sphygmomanometer pressure at sixty millimetres of mercury and sterilized. About one millimetre to one side of the selected vein or site at which one suspects a vein, a bleb of local anesthetic agent is injected. The transfusion set is then suspended and saline solution is run through, and then six to eight inches from the needle an artery forceps is applied to clamp off the rubber tubing.

The fingers and thumbs of both hands are then used to squeeze out all the air and fluid from this forceps down to the needle, care being taken that none passes back behind the advancing fingers and thumb. Then another artery forceps clamps off the tubing one-eighth to one-quarter of an inch from the needle base, so that there are six inches or so of collapsed tubing between the upper and lower forceps.

The needle is then inserted into the skin at the site of the injection (there is no danger of pushing through both walls of the vein this way), and once the point of the needle has been sunk well into the subcutaneous tissues, the artery forceps near the needle are removed. The tubing remains flat and collapsed, with a fair degree of suction ready to suck up any blood once the needle is in the vein.

Next, the needle is elevated and drawn across till it is over the vein or suspected site, and an attempt is made to enter it in the usual manner, except that the needle point is under the skin in this instance. When the vein has been entered blood rushes back up the tubing, the remaining artery forceps is removed speedily, the sphygmomanometer is released, and the saline solution flows rapidly. Then the needle is strapped in place and the arm fixed to a splint. A good way to strap down the needle with adhesive plaster is as follows. Take a piece of adhesive plaster five inches long and a quarter of an inch wide, and with the adhesive side upmost slide it up under the tubing to the needle. Fold each arm of the plaster over and forwards on each side, and then slide another piece up under the tubing close to the first piece; but in this case the arms of plaster are folded over and backwards.

The following points are important:

1. In cases in which the veins in the cubital fossa have been used, the arm should be bandaged to a back splint. (Any bending of the elbow will probably result in pushing the needle right through the other wall of the vein.)
2. The blood having been sucked back into the tubing by the vacuum, no time must be lost in removing the remaining artery forceps, as clotting is sometimes rapid.
3. A further modification is to place the artery forceps which is near the needle a little further back from it, say one to one and a half inches, squeeze out the air in this portion near the needle, and plunge the needle into sterile citrate solution, so that when the apparatus is ready one has from the needle downwards the following materials: (i) the needle, (ii) a depth of one and a half inches of citrate solution, (iii) artery forceps, (iv) six inches of collapsed tubing, (v) artery forceps, (vi) above this forceps a column of saline solution. The needle is then inserted as described above.

This modification has the advantage that, should the operator be a little slow, clotting is less likely to occur. However, without this modification it must be stated that clotting is extremely rare in the time usually taken.

## Reviews.

### JAPANESE CULTURE AND PRISONERS OF WAR.

In the early days of our life-and-death struggle with the fascist countries we were left with no alternative but to listen with patience and much trepidation to carefully censored news of enemy successes on the battlefields, of their submarines taking a heavy toll of our shipping, and of devastating assaults from the air against our large cities with mounting casualties among defenceless men, women and children. Then followed the relentless advance of Japanese hordes down the Malayan peninsula, the seemingly irreparable loss of two great battleships, ending in the final tragedy of Singapore. Even more serious than the long sequence of initial disasters was the sad realization that a large and effective fighting force, together with thousands of civilians, was now hopelessly trapped in the tolls of the Japanese invasion, which was rapidly spreading through

most of the Allied territory north of Australia. Now, more than ever before, we were vitally concerned with the problem of home defence, and were obliged to leave the fate of our luckless prisoners to the tender mercies of the enemy, and to the humane provisions of international law.

After a long and painful silence lasting nearly four years, the outside world learnt with horror and indignation of the brutal manner in which those "tender mercies" had been extended to our people who were unfortunate enough to fall into the clutches of a barbarous and fanatical foe. One aspect of this harrowing story is splendidly narrated by the Australian war correspondent, Rohan D. Rivett, in a book with the appropriate title, "Behind Bamboo"; and it contains the plain unvarnished truth about the Nipponese attitude to recalcitrant whites who were at all sceptical about their coprosperity aims in the south-west Pacific.<sup>1</sup> There is ample evidence throughout this stirring narrative to show that the Japanese mentality is of a type that will be always difficult to understand. Never was man's inhumanity to man more poignantly exemplified than in the cruel treatment meted out to prisoners of war by these strange little Asiatics. Perhaps a warped sense of inferiority and the necessity to demonstrate to other Asiatics the rising sun of oriental greatness may account for the dastardly lashings, tortures and indignities so regularly inflicted upon their hapless victims. None suffered more than the thousands of starving and disease-ridden workers who were employed in the construction of that infamous Burma-Thailand railway.

All through the pages of his book the author refers with pride to the indomitable spirit of his fellow prisoners, and their inflexible determination to overcome dire hardships and constant degradation whilst awaiting the inevitable day of victory. The unimaginable horrors of the jungle camps, the wanton and deliberate policy of starvation practised by the enemy, the consequent malnutrition and unrestrained disease, the appalling conditions endured in the dark overcrowded holds of transport ships, the constant lack of adequate clothing and decent shelter; all these and many worse privations were faced with brave hearts in the vague hope that some day their victorious comrades would bring relief, and perhaps retribution to the execrable foe.

This is a book for every Australian doctor to read, for it tells in glowing terms of the services rendered by members of our profession in helping to bring bodily succour and mental uplift to these patient victims of Japanese brutality and neglect. In common with other officers they gave freely of their insignificant pay to provide unlawful sustenance for the desperately ill; they used their ingenuity in the improvisation of much-needed medical equipment; and they suffered indignities and bodily hurts in order to obtain some respite from work for very sick patients or to fight for a small privilege which might add to their comfort. British, American, Australian and Dutch medical officers upheld the highest traditions of their profession under the most dreadful conditions it is possible to imagine. In an article which appeared in this journal a few weeks ago, one of these doctors prefaced his remarks with a significant statement which may well be quoted here, as it stresses a theme running through Mr. Rivett's interesting book:

... the returned prisoner of war is in most cases not only a normal man, except for some temporary physical disability, but one who has had intellectual and emotional experiences which give him a decided advantage over his fellows. He has learned to appreciate the minor pleasures of life. He knows the essentials of existence. He has a high threshold to the pin-pricks of ordinary life. He knows man for what he is—his courage, his cowardice, his limitless generosity, his gross selfishness, his nobility and his utter meanness. And if he tends towards cynicism at the discovery of the relation of man's best qualities to his intragastric tension, he is robbed of all the bitterness by the memory of the heights to which he has seen some men rise in spite of starvation, of illness and of every degradation which a malignant enemy could put upon them.

In discussing a book so full of human frailty, it seems rather superfluous to comment on such trivialities as the use of the word "Parthenon" for "Pantheon" on page 137, and the spelling of "diaphanous" on page 141, which is obviously a typographical error. However, mention must be made of the excellent sketches by Relf and Chalker, as they help materially in giving the right atmosphere.

<sup>1</sup> "Behind Bamboo: An Inside Story of the Japanese Prison Camps", by Rohan D. Rivett; 1946. Sydney and London: Angus and Robertson, Limited. 8½ x 5½, pp. 418, with illustrations. Price: 12s. 6d.

## The Medical Journal of Australia

SATURDAY, AUGUST 10, 1946.

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### RADIOACTIVE IODINE THERAPY IN HYPERTHYROIDISM.

In September of last year attention was drawn in these columns to the therapeutic use of radioactive phosphorus. It was shown that the development of the cyclotron had been followed by the preparation and identification of radioactive isotopes of all the stable elements and that these could therefore be "tagged" and their course in living structure directly studied. Hamilton, writing in 1942, stated that radioactive isotopes of twenty-one elements had been used in various fields of investigation and that practically all the biological sciences had been included. It was also pointed out that artificial radio-elements had a dual significance in medical science—they might be used in the field of pure research and in that of practical therapeutics. The use of these substances in therapeutics is dependent on successful research in metabolism; to the research of this kind the term "tracer" research has been applied. Among the elements with which work has been done is iodine. V. M. Trikojus, in discussing the study of iodine metabolism by means of the radioactive isotopes of the element, has explained<sup>1</sup> that the great advantage of this technique lies in the fact that, whereas in the ordinary chemical, physical and biological processes the radioactive isotopes behave exactly as the stable forms of the corresponding elements, they become modified and can be detected in extreme dilution by comparatively simple physical apparatus at the moment they begin to disintegrate, that is, when they manifest their radioactivity. In the production of radioactive isotopes of iodine (the process was described for phosphorus in our discussion last September) the normal atomic weight of 127 is altered. Some of the isotopes have been used in the study of animal and human thyroid physiology and iodine metabolism. Trikojus in referring to an isotope with a short life ( $I^{131}$ )

stated that it enabled an intense and close range bombardment to be achieved with the minimum of damage to other tissues; the selective localization of the radiation, he explained, offered obvious advantages over the more usual X-ray therapy. The radioactive isotope of long period ( $I^{131}$ ), he stated, had provided a means of determining *in situ* the functional activity of the thyroid gland in respect to iodine in man and in the laboratory animal under normal and pathological conditions. Foremost among those who have been investigating this subject are workers at the Massachusetts General Hospital and the Massachusetts Institute of Technology. A report of work done at this centre was presented to the American Society of Clinical Investigation in May, 1942, and was published in the same year. Much of the preliminary work was done with a view to the discovery of the conditions under which radioactive iodine might be administered with maximum radiational effect in the pathological thyroid of patients suffering from hyperthyroidism. This statement is made at the outset in an article recently published by Saul Hertz and Arthur Roberts,<sup>2</sup> who have taken a leading part in this work all along.

The present article is the seventh of a series by Hertz, Roberts and other workers at the Massachusetts General Hospital and the Massachusetts Institute of Technology. It is a progress report on the "internal irradiation" treatment of 29 patients suffering from hyperthyroidism—it is a three to five year follow-up report of these cases. The patients selected for this treatment had had no previous iodine treatment and were judged by clinical tests to be suffering from hyperthyroidism. The radioactive iodine used was obtained by deuteron bombardment of tellurium and consisted of a mixture of different radioactive isotopes of iodine. Over 90% of the activity consisted of the 12.6 hour isotope  $I^{131}$  and most of the remainder of the eight-day isotope  $I^{130}$ . The activity of the total amount administered varied between 0.7 and 28 millicuries. In nineteen cases the total amount was given to the individual patients as one dose; in ten cases divided doses were used. From data already obtained by tracer studies it was thought desirable to keep the total amount of iodine administered below two milligrammes of iodine in order to ensure maximum collection by the thyroid. After the administration of radioactive iodine, iodine which was not radioactive was given in the usual dosage of saturated solution of potassium iodide, five minims twice a day, at periods varying from one day to several weeks after the radioactive iodine dosage. The basal metabolic rate was estimated frequently. In most cases, after a period of two to four months following the administration of radioactive iodine, routine iodine therapy was stopped when a normal basal metabolic rate had been maintained on iodine for a few weeks or months. Failure of the rate to rise after cessation of iodine treatment was interpreted as positive evidence of remission of the disease. A rise in the rate was looked on as indicating that the internal irradiation had failed. Before a cure was thought to have been obtained clinical evidence of remission was required during a prolonged follow-up period of six months to one year, or more ideally, we are told, a period of two to five years. In one of the 29 cases the dosage was subminimal. Of the remaining 28 patients, five were subjected to partial

<sup>1</sup>The Australian and New Zealand Journal of Surgery, Volume XIV, 1944-1945, page 147.

<sup>2</sup>The Journal of the American Medical Association, May 11, 1946.



thyroidectomy and all five developed hypometabolism. Twenty of the remaining twenty-three patients are no longer thyrotoxic and are regarded as cured. Three cases are regarded as failures. In no case did undesirable complications occur. Unfortunately these authors, in summing up their results in the series of 29 cases, refer to percentages in such a way that the unwary may draw unjustifiable conclusions from their statement.

The article by Hertz and Roberts is followed by another by E. M. Chapman and R. D. Evans on the same subject. These authors explain that the study reported by them was bequeathed to them by Hertz when he went on active service with the Navy in 1943. Between May, 1943, and March, 1945, twenty-two patients suffering from hyperthyroidism were treated with large doses of radioactive iodine, no other form of therapy being used. Chapman and Evans thought that the use of doses below ten millicuries explained the lack of improvement previously reported in certain cases. They therefore increased dosage. The average dose per patient became 40 to 50 millicuries, and the largest single dose was 79 millicuries, or about 0.8 millicurie per estimated gramme of thyroid tissue. The radiation dose in a patient who swallowed 14 millicuries was calculated as being equivalent to 3,490r. Fourteen of the 22 patients responded well to a single dose of the radioactive iodine; three were given two doses and five were given three doses. Four patients became myxædematous, and two, though their condition was improved, still had mild hyperthyroidism. Chapman and Evans state that ordinary iodine is not necessary when radioactive iodine is given. They have also found that patients who have not responded to other forms of treatment or have been sensitive to iodine or thiouracil, have responded well to radioactive iodine.

This short account of the work carried out at the Massachusetts General Hospital and the Massachusetts Institute of Technology shows that another method for the treatment of thyrotoxicosis is being developed. It must be clear that much more work is needed before it will be possible to determine its place in thyroid therapy. In one small point the two sets of observers quoted are at variance. The first two state that the addition of ordinary iodine therapy after the administration of radioactive iodine offers many advantages in the clinical care of patients and in the economy and safety of the procedure. The last two observers, as already stated, hold that ordinary iodine is not needed when radioactive iodine is given. In this form of therapy a very potent weapon is being used and its effects may be long delayed. Chapman and Evans point out that toxic reactions to radioactive iodine are very much like acute Röntgen ray sickness. They remark also that no subsequent ill effects or leucopenia have been observed and that no malignant changes were observed in tissue removed in two cases, the removal in one taking place as long as two years after radiation. That malignant change is a possibility is sufficient reason for insistence that radioactive iodine shall be given only to those patients who can be followed up for long periods. Another point to be remembered is that, though, as Hertz and Roberts show, most of the iodine given in a radioactive form is excreted by the kidneys in under 72 hours, the radioactivity during that period may have an effect on other tissues than those of the thyroid and that these effects may possibly vary in different types of individual.

## Current Comment.

### TEMPORAL ARTERITIS.

ONE of the difficulties besetting investigators who differentiate and describe "new" pathological syndromes is that of knowing what to call them. The terminology of medicine is now known to be in many instances inaccurate, and indeed there are unhappy examples of diseases which have many names, none of which really suggest the condition they purport to describe. Temporal arteritis is one of the recently described conditions which promises to belie its original sponsors. W. T. Cook, P. C. P. Cloake, A. D. T. Govan and J. C. Colbeck, after observing seven patients with this condition, have produced a good review of the subject, and at once indicate their views by qualifying the name "Temporal Arteritis" with the apparently contradictory subtitle "A Generalized Vascular Disease". The cases they describe seem to be identical with those originally described by Horton, Magath and Brown fourteen years ago, and with the thirty odd cases now recorded in the literature. They think that this condition is by no means rare, but not often recognized. All the patients so far recognized as sufferers have been over fifty-five years of age, and the sex incidence has been predominantly female. The classic symptoms described are severe and constant headache, usually dull, but often throbbing in nature, cerebral manifestations suggestive of either space-occupying lesions or vascular accidents, ocular disturbances, ranging from muscle palsies to loss of sight, and also systemic symptoms of different kinds. One outstanding feature has been inflammation of the temporal arteries. This has been so striking in some cases that the very obvious redness and swelling over the temporal arteries in their exposed portion have induced the patients to apply poultices under the impression that some superficial structure was inflamed. In these cases the tenderness of the vessels, always definite and troublesome, has been most severe. These authors point out that a review of the published cases shows that such symptoms as generalized aches, pains in the joints, fever, sweating at night, anorexia and loss of weight have been observed in all the cases in some degree. A latent period has followed this phase before the more dramatic and localizing signs in the temporal arteries have appeared. The cerebral symptoms have been of great diversity, but one feature has been frequently observed. This is the curious way in which patients mentally confused or perhaps presenting signs like those of a cerebral tumour have made an unexpectedly good and rapid recovery. The ophthalmoscope has, however, revealed a serious organic basis for some of the ocular signs, and oedema of the disk or atrophy has not infrequently been seen, and partial or total loss of sight in the affected eye has occurred. With the conspicuous inflammation of the temporal arteries may be associated enlargement of the cervical glands. The occurrence of thrombosis in vessels the subject of an acute inflammatory change might be expected in elderly people who already have some degree of vascular degeneration, and this is found to be so in these cases.

Two other points must be referred to in order to complete this brief account. One is the question of the exact nature of the disease. Is it really a separate disease, distinct from the other forms of arterial disease? The other is what evidence is there of affection of other arteries in the body that will justify us in regarding the condition as one of widespread nature? The pathological changes can only be referred to briefly here. They include cellular infiltration of the vessel walls in the outer and middle coats, often with considerable numbers of eosinophile cells, and also giant cells. Some necrotic changes occur in places in the media and interna, apparently exciting giant cell formation, but the development of the inflammation is from the perivascular structures inwards.

Cooke and his co-workers state that the histological distinction between this form of arteritis and *periarteritis nodosa* cannot always be made, and the same applies to

<sup>1</sup> *The Quarterly Journal of Medicine*, January, 1946.

*thromboangiitis obliterans*. However, they point out that the former usually affects visceral arteries, and does not tend to spread axially, being more strictly focal. The latter, with its granulation tissue formation in the vessel wall, is also similar, but the change tends to implicate the whole wall, and the veins are often also affected. There is no support for the idea that the disease might be due to some already known specific inflammation, such as that due to tuberculosis. There is thus good reason for believing that this disease is *sui generis*, though its aetiology is unknown.

The second remaining point concerning the wide possible distribution of the arterial changes can be simply answered, for in addition to the suggestive symptoms of other vascular disturbances there is autopsy evidence of inflammatory changes in many other important arteries. These latter findings have been recorded in the cases of old people who have presented serious signs of vascular degeneration for some time before death, in addition to the characteristic focal signs. In general the immediate prognosis is good, as the troublesome symptoms attributable to this form of arteritis usually subside within six or twelve months. This feature, the peculiar age period, and the predilection for the temporal arteries seem to warrant our regarding this condition as a clinical entity in spite of certain pathological resemblances to *periarteritis nodosa* and *thromboangiitis obliterans*. The proven generalized nature of the disease makes it more than a clinical curiosity, especially as involvement of such arteries as those of the retina causes serious results.

#### VIBRATION SYNDROME.

THE use of pneumatic tools has been known for a number of years to be responsible for sensory and circulatory disturbances in the hands. The special experience of the war years has amplified this knowledge owing to the vast expansion of war industries in which these tools were employed. C. R. McKinnon and W. N. Kemp have collected records of 150 men and women suffering from what they have called, for want of another name, "vibration syndrome".<sup>1</sup> In Vancouver the great increase in the activities of ship-building yards and to some extent of airplane manufacture also provided opportunities for studying these disturbances, enhanced somewhat by the heightened tempo of war industries. It is over forty years since Italian observers first published notes on this syndrome, and up to the outbreak of war articles were published from time to time describing the reduction of sensibility in the fingers and those vasospastic changes known as "dead fingers", both found in a certain proportion of constant users of pneumatic tools. These tools consist of a reciprocating motor component activated by compressed air and a tool to which this movement is transmitted. Riveters, stone-cutters, hammers and drills are in use working on this principle. They vary in weight and convenience of handling and the speed of the piston movement may vary from 250 to 4,000 strokes a minute. Other occupations besides those of the workmen using these tools have been recorded as causing vasospastic phenomena in the hands, such as typing and piano playing, and the general name of "traumatic vasospastic syndrome" has been proposed. German writers have described lesions in the joints of miners using pneumatic drills as well as the vascular troubles.

It is of interest to consider briefly the exact duties of the workers concerned in this inquiry. They were all employed in shipbuilding or aircraft production. The bolter-up attached plates to the ship's frame with temporary cold bolts, using a wrench weighing thirty pounds and stroking at 1,200 to 3,000 times a minute. A reamer rebored the holes if necessary with a tool weighing twenty-eight pounds, using one hundred pounds' pressure to rotate the tool, which was held by a crossbar. The riveter now mushroomed the rivet with the aid of a worker exerting counter pressure; they both used an air

gun of about twenty-five pounds' weight, delivering 1,300 blows a minute, and held the tool in place with the gloved hand. Finally a caulker closed the seams by a chisel gun of twelve pounds weight and giving 2,000 blows a minute. One would expect that the bolters-up and the reamers would be less affected by vibration, and this was so. The riveters were the most commonly affected class, some 40% showing symptoms. Women used similar tools in the construction of aircraft, but these were much lighter, only five pounds, and worked at a rate of 1,200 blows a minute. Very few cases of vibration disturbances were seen in this group, but it is noteworthy that when construction switched to a heavier type of aircraft the case incidence was trebled.

Study of the exact manner in which the tools were used revealed that posture was important. Working with the arms upstretched predisposed to the onset of symptoms, so did obstruction of the circulation of the arm by a sleeve tightly rolled up; another very important factor was the experience of the worker, for skill and judgement determined to a good extent the suitability of stance and posture adopted. Further contributing factors were working hours and temperature. Overtime and overwork induced by payment on a piecework basis multiplied the exposure to vibration strains, and cold weather was definitely unfavourable. In fact a fairly constant feature of the syndrome is the exaggeration of the symptoms by cold. Investigation showed that the objective signs were few. There was some weakening of the grasp, the fingers often appeared blanched, especially if exposed to cold, which also gave rise to cyanosis. Some increase in local perspiration was occasionally seen. The patients complained that numbness and tingling began in the fingers most exposed to the strains, according to the particular work done. Burning feelings were complained of in the palm, and all these symptoms were worse in the morning, when the hands felt numb and stiff, though improving as they warmed up. Later symptoms were cramps in the arm, and even in the shoulder and neck, and tremor then sometimes appeared. Sensory changes could not be demonstrated to any significant degree, though touch sense was a little lowered, and tenderness was complained of over the whole extremity in some instances. The pathology is supposed to be a vasospasm, which may, if the repeated trauma is continued, lead to some degree of vascular occlusion of irreversible type. There was no difficulty in the diagnosis, and the prognosis was good.

All the patients were treated at the rehabilitation department of the Workmen's Compensation Board in Vancouver. The best methods were found to be rest, protection of the affected limb from cold, and the application of heat in a cabinet admitting the whole upper extremity, up to 115° and 120° F., followed by light massage. A most important feature of the treatment is psychological. Many of the workers feared that they would become paralysed, and complete reassurance concerning the future capacity for employment was most necessary. In one case a paresis of some of the shoulder muscles complicated recovery. This was of psychoneurotic origin, and was dramatically cured by suggestion under "Pentothal". As a rule cure was complete in six weeks, but in no instance was a man allowed to return to work with pneumatic tools. McKinnon and Kemp have arrived at the conclusion that correct supervision of workers using compressed air tools under ideal conditions should prevent the onset of a declared form of the vibration syndrome. If symptoms appear the affected workers should be taken off this type of occupation; therefore they should be encouraged to report if trouble threatens.

#### INDEX TO "THE MEDICAL JOURNAL OF AUSTRALIA".

THE index to THE MEDICAL JOURNAL OF AUSTRALIA for the half-year ended June 30, 1946, is in the press and will shortly be available. A copy will be sent to every person in regular receipt of the journal who applies to the Manager at The Printing House, Seamer Street, Glebe, New South Wales. No application is needed from those who have received the index to previous volumes.

<sup>1</sup> The Canadian Medical Association Journal, May, 1946.

## Abstracts from Medical Literature.

### THERAPEUTICS.

#### Ventricular Tachycardia.

S. L. ZIMMERMAN (*Annals of Internal Medicine*, October, 1945) has reported ten cases of ventricular tachycardia in which quinidine treatment was adopted. The serious outlook in this condition is known, especially after coronary occlusion. In this series the arrhythmia complicated cardiac infarction in five cases. In four cases the infarction was anterior and in one posterior. In six cases hypertension was present. Only one patient in this series had digitalis before the onset of the tachycardia. The heart rate was 125 to 216. During treatment the Q-R-S interval became prolonged, but as this did not have any ill effect it was ignored. One patient died and one recovered before any quinidine had been given. In other cases quinidine was given in doses of six grains thrice daily and the dose was increased to twelve grains every three hours. A maximum of 922 grains was given before normal rhythm was restored. Up to 132 grains per day were given to one patient, and this was repeated the next day. There were no serious effects due to the drug. In one case vomiting and diarrhoea occurred. The author recommends quinidine in the treatment of ventricular tachycardia, in massive doses if necessary. He states that there is no clear evidence that its administration is harmful following acute coronary occlusion.

#### Thiouracil.

J. L. GABRILOVE, M. J. KERT and L. J. SOFFER (*Annals of Internal Medicine*, October, 1945) describe the treatment with thiouracil of 51 patients suffering from thyrotoxicosis. The patients were admitted to hospital for four to six weeks. Thiouracil was given in doses from 0.4 to 1.0 gramme daily, in divided doses for the first four weeks. The basal metabolic rate usually fell in the second or third week. Cessation of thiouracil after any number of weeks up to 22 weeks was usually associated with a rise in the basal metabolic rate. Toxic effects included conjunctivitis, oedema, drug fever, leucopenia and agranulocytosis. In eleven cases treatment had to be discontinued because of severe toxic effects, mainly agranulocytosis and drug fever. One patient with agranulocytosis died and five recovered with liberal use of penicillin and blood transfusions. The authors recommend thiouracil only for older patients when operation is too risky, in iodine-fast cases as pre-operative measure, and in the treatment of patients with recurrent hyperthyroidism who have been operated upon twice or more.

#### Penicillin in Subacute Bacterial Endocarditis.

J. R. GOERNER, A. J. GEIGER and F. G. BLAKE (*Annals of Internal Medicine*, October, 1945) describe the treatment of twelve patients with subacute bacterial endocarditis by massive and prolonged doses of penicillin. In 1942 the authors treated four patients with

doses of penicillin ranging from 30,000 to 100,000 units for eight to eighteen days; although there was a definite lessening in the fever and the blood cultures became less pronounced, all the patients died within a year. Since 1944 a dosage of 240,000 units of penicillin daily for three or four weeks has been given by continuous intravenous infusion day and night. Intramuscular injections were tried in one case, but the response was not satisfactory. Other patients objected to occasional intramuscular injections of penicillin. Eleven out of twelve patients treated in this way recovered and have remained well.

A. L. BLOOMFIELD and R. M. HALPERN (*The Journal of the American Medical Association*, December 22, 1945) discuss the penicillin treatment of subacute bacterial endocarditis. Many cures have been reported, but relapses have been noted in many instances, especially among patients treated for two or three weeks only. The authors report eighteen cases in which the recovery rate was 100%. All these patients have been followed up for three to seventeen months, without any recurrence of symptoms or return of positive blood culture. In these cases the strain of streptococcus was sensitive to penicillin in a test tube dilution of at most 0.1 unit per millilitre of culture medium. At least 100,000 to 200,000 units of penicillin were given daily, either intravenously or in four intramuscular injections. Treatment was carried out over at least two months. As a rule 50,000 units given intramuscularly every six hours were found the most satisfactory treatment, but in some cases it was necessary to increase this dose. When 60,000 units were injected intramuscularly every twelve hours the results were unsatisfactory. The authors advise 200,000 units to be given daily in divided intramuscular injections every four to eight hours. Insensitive strains of streptococci did not respond to this standard dose, and some strains did not respond at all. Some resistant strains appear to become more resistant during treatment, and larger doses of the drug may then give better results. In several cases fever persisted for up to twenty-one days, in spite of the fact that blood cultures were no longer being obtained. Continued fever was an indication for prolonged treatment. Cardiac failure was in some sense a contraindication to treatment, whether it developed before or during treatment, inasmuch as sterilization of the blood did not necessarily lead to recovery from the symptoms of cardiac failure. Many cardiac complications occurred during treatment in addition to cardiac failure. Tachycardia, arrhythmias and mild impairment of function were noted frequently.

#### Streptomycin.

H. A. REIMANN, A. H. PRICE and W. F. ELIAS (*Archives of Internal Medicine*, November-December, 1945) have described the use of streptomycin for certain systemic infections. This substance, derived from *Actinomyces griseus*, when injected parenterally appears in blood, urine and spinal fluid in amounts theoretically bacteriostatic for certain Gram-negative bacilli known to be resistant to penicillin and sulphonamides. Given orally, it is mostly excreted in the faeces, where it suppresses various bacteria. Strepto-

mycin hydrochloride was given to five patients with typhoid fever, three with brucellosis, one with tuberculous meningitis and five with infection of the urinary tract. Four grammes of streptomycin were injected intravenously every day for periods up to nineteen days. One gramme of streptomycin contained one million units. In typhoid fever the results were not impressive; two out of five patients died. In brucellosis one patient recovered, possibly owing to the streptomycin. In two cases streptomycin appeared to have no effect. In urinary infections one to five grammes of streptomycin were given intravenously and intramuscularly daily for four or five days. *Bacillus pyocyaneus*, *Bacillus proteus morganii* and *Escherichia coli* infections were eliminated, but only when the bacteria were of susceptible strains. When streptomycin was given orally every three hours in doses of 0.25 gramme, colon bacilli were eliminated from the faeces in twenty-four hours. It was suggested that the drug might be used for intestinal obstruction or other intestinal infections. In ulcerative colitis five grammes given daily by mouth for seven days lessened the number of stools, but the fever persisted unchanged. Further researches on the effect of treatment with streptomycin are in progress.

#### Sulphathalidine.

M. H. STREICHER (*The Journal of the American Medical Association*, December 15, 1945) describes a new drug, phthalylsulphathiazole, or sulphathalidine, used in colon infections. It is sparingly absorbed from the bowel and has a high bacteriostatic effect on intestinal flora. Three grammes daily were found to be a sufficient dose; higher doses caused cramps, and looser and more frequent stools. The drug was used in the treatment of eighty patients suffering from chronic ulcerative colitis, six suffering from amoebic dysentery, two from bacillary dysentery, eight from *Giardia lamblia* infections, two from paratyphoid fever and two from *Dientamoeba fragilis* infections. Results are described as good in both acute and chronic types of ulcerative colitis and in all the other conditions except amoebic dysentery, in which results were poor. In some cases the drug was given for six to eight weeks without toxic effects.

#### Chilling and Penicillin Therapy.

M. TRUMPER and G. T. THOMPSON (*The Journal of the American Medical Association*, March 9, 1946) describe the effect of chilling the area of injection in order to prolong the effect of penicillin. The effect of cold is to slow the circulation. The authors used this chilling procedure in the treatment of gonorrhoea by maintaining a circular ice bag over the deltoid muscle for two hours before and after the injection of penicillin. Harness was used to keep the ice bag in position. The effect of the method was to reduce the temperature of the deltoid muscle to about 17° C. An hour later the temperature was 29° C. One hundred thousand units of penicillin in ten millilitres of saline solution were chilled in crushed ice for at least five minutes prior to injection into the chilled deltoid muscle. The effect of this treatment was to produce a cure of gonorrhoea in 90% of patients.



These results can be compared with the results obtained by a single injection of 100,000 units of penicillin without any chilling or without the use of mixtures of beeswax and peanut oil to delay the action. With such single dose treatment only 41% of patients were cured, when no measures were taken to delay the absorption of penicillin. Using a similar technique, the authors treated gonorrhea with single doses of 50,000 and 70,000 units of penicillin. The results gave cures in 77% and 85% of cases respectively. The authors conclude that 100,000 units of penicillin by the chilling method give results comparable to those obtained by using multiple injections or a single dose of penicillin in beeswax and peanut oil to a total dosage of 100,000 units.

#### Typhus Fever.

H. M. ROSE, R. B. DUANE AND E. E. FISCHER (*The Journal of the American Medical Association*, December 22, 1945) describe the treatment of typhus fever with para-aminobenzoic acid. This substance has been shown to have an inhibitory effect on both murine and epidemic typhus rickettsiae in white mice and in the developing hen's egg. In Cairo louse-borne typhus has been treated with 24 to 28 grammes of para-aminobenzoic acid every twenty-four hours in a controlled series of cases, and the drug appeared to modify favourably the course of the disease, if given in the first week of the illness. The authors report a case of Rocky Mountain spotted fever in New York in which the patient was treated with 25 grammes of para-aminobenzoic acid daily. Rapid recovery followed the administration of the drug. Each dose of the drug—two to four grammes—was given with 25 millilitres of chilled 5% sodium bicarbonate solution to counteract nausea.

### NEUROLOGY AND PSYCHIATRY.

#### Folie à Deux in Uniovular Twins Reared Apart.

UNIOVULAR TWINS who have been reared apart are extremely rare, and the authors, W. H. Craike, Elliot Slater and George Burden (*Brain*, Volume LXVIII, Part III, 1945), who report a case of *folie à deux* in such a pair of twins, claimed that it is unique in literature. These twins were female, and were separated at the age of nine months and brought up in different parts of the country. They met each other again at the age of twenty-four, but never lived together nor had any close contact. Yet each developed a paranoid psychosis involving the other in her delusional system. The chief difference is that one woman has developed chronic insidiously progressive paranoia, while the other shows paranoid symptoms only episodically. Both are regarded as being the subjects of a basically schizophrenic illness.

#### Aminoacetic Acid (Glycine) in the Treatment of Depression.

MAX H. WEINBERG (*The Journal of Nervous and Mental Disease*, December, 1945), convinced that the treatment of depression by electro-shock is a strenuous business not unfringed with risk, has experimented with the giving

of aminoacetic acid to patients suffering from depression. The theory he relies on is that depressives suffer from anorexia and hypsomnia, and that by supplying an amino acid in an easily assimilable form the vicious circle may be interrupted to the good of the patient. Nineteen patients are reported who have been given aminoacetic acid by mouth in the past two years. It is claimed that most of the patients with mild depression recovered, and of those who did not recover some showed improvement. Two patients with involutional melancholia manifested no improvement. If these stubborn cases are omitted, 64% of the depressives were considered cured, 24% showed some slight improvement, and 12% remained unchanged. The author pleads for a wider trial of this simple therapy.

#### Disappearance of Painful Phantom Limbs after Electric Shock Treatment.

AFTER mentioning the many forms of treatment tried and found wanting for the elimination of the painful phantom limb, J. E. Pisetsky (*The American Journal of Psychiatry*, March, 1946) gives details of a cure by electro-shock. His patient, a fifty-five year old white male, having sustained injuries, had both legs amputated below the knees. He complained of itching and burning of the toes and heels of the phantom limbs. Sometimes the absent feet felt hot and cold. Occasionally he exhibited choreic jerks of both legs which he could not control. He became depressed and harboured ideas of self-destruction. Irritability and agitation followed. His prepsychotic history indicated that for many years he had been nervously maladjusted. Five years after the amputation he was given seven major convulsions, when he displayed a minor hypomanic reaction. The phantom limbs disappeared and have not returned.

#### Personality Studies of Marihuana Addicts.

SOL CHAREN AND LUIS PERELMAN (*The American Journal of Psychiatry*, March, 1946) have studied fifty-five Negro and five white soldiers to determine the basis for their addiction to marihuana. They found a background of psychopathic development and behaviour. Thirty-four of their patients came from poverty-stricken levels. Only two of the patients had desirable army records. Fifty had criminal records. There was an over-emphasis of sexuality at the infantile level. Sixty-five per centum came from broken homes caused by death, desertion or separation. In nearly all cases there were early histories of nightmares, enuresis, sleep disturbances and dizzy spells. Only eleven of the sixty patients had gone as far as high school, although the results of intelligence tests were normal. Work records were poor, with many changes of jobs and much unemployment. Use of other stimulants was common. None of the men had any desire to be cured of their addiction.

#### Epilepsy and Motor Vehicle Driving.

MARK ALBERT GLASER AND MARTIN IRONS (*The Journal of Nervous and Mental Disease*, January, 1946), discussing the question of motor-car driving and epilepsy, conclude that

epilepsy in a motor vehicle driver constitutes a danger, and that such a person should be prevented from driving. They consider that epileptics should not be given a driving licence unless they have been free of seizures for a period of three years. Lapses of consciousness from secondary epilepsy or other syndromes should be treated in a similar manner, but the licence could be restored at an earlier period when the spells are under medical control. The authors consider that epileptic seizures and lapses of consciousness should be reported. Neither nocturnal seizures nor the presence of an aura constitute safety factors. The diagnosis should be made on clinical grounds and the electric encephalogram should be used only to supplement the clinical diagnosis.

#### Spinal Cord Changes with Avitaminosis.

ANALYSING the clinical neurological findings in a large number of cases of avitaminosis previously reported in the literature, Norman R. Shulack and Michael Peters (*The Journal of Nervous and Mental Disease*, October, 1945) find the following signs: (a) ataxia, (b) decreased abdominal reflexes, (c) loss or diminution of position and vibratory sense, (d) increase or decrease of deep tendon reflexes, (e) occasional presence of the dorsal plantar reflex. They then report a case of clinical postero-lateral sclerosis due to multiple vitamin deficiency. The patient was an Italian prisoner of war who, after the diagnosis was established, was given a diet with a high caloric value and a high vitamin content, and later was put on massage, active exercise and reeducational walking exercises. Sixteen days after his admission to hospital motor power began to improve in the arms and legs, and he was finally discharged. The authors discuss the differential diagnosis from other neurological conditions, and conclude that changes which come about from avitaminosis are more frequently seen in degeneration of the spinal cord posterior columns and less often in the lateral columns.

#### Exhaustion Syndrome in Excited Psychotic Patients.

NORMAN R. SHULACK (*The American Journal of Psychiatry*, January, 1946) is concerned with psychotic patients who maintain a progressive motor and mental excitement which may develop in the grave syndrome of acute delirious mania. Exhaustion may be the result of many conditions. When it is acute the outlook is poor. The features of this syndrome are sustained excitement, rapid and thready pulse, rapid loss of weight, profuse clammy perspiration, fall of blood pressure and pulse pressure, and hyperpyrexia. Seven cases are described in detail. The author believes that among the more serious causes are the accumulation of toxic catabolites, malnutrition, dehydration, sodium loss and lowered secretion of adrenal cortical hormones with sustained small blood vessel dilatation and blood stasis. Most patients die; but the author reports a number of recoveries by the institution of treatment before hyperpyrexia reaches 105° F., by adequate sedation, nourishment, the replacement of sodium and regular instillations of adrenal cortex extract.

## Bibliography of Scientific and Industrial Reports.<sup>1</sup>

### THE RESULTS OF WAR-TIME RESEARCH.

During the war a great deal of research was carried out under the auspices of the Allied Governments. It has been decided that a large proportion of the results of this research should now be released for general use.

The United States Department of Commerce, through its "Publication Board", is now issuing abstracts of these reports in the form of a "Bibliography of Scientific and Industrial Reports". The complete bibliography is being received in Australia, and extracts likely to be of interest to readers of this journal will be reproduced as far as practicable each week.

The original reports may be obtained in two ways: (a) Those marked with an asterisk may be obtained without cost on making application to Secondary Industries Division (Department of Post-War Reconstruction), Wentworth House, 203, Collins Street, Melbourne, C.I. (b) In other cases microfilm or photostat copies of the original report may be purchased from the United States through the Council for Scientific and Industrial Research Information Service. Readers desiring to avail themselves of this service should send the Australian equivalent of the net United States price to the Council for Scientific and Industrial Research Information Service, 425, St. Kilda Road, Melbourne. S.E.2. All other charges will be borne by the Council for Scientific and Industrial Research.

Further information on the subjects covered by the reports and kindred subjects may be obtained by approaching the Council for Scientific and Industrial Research Information Service, the Secondary Industries Division, Department of Post-War Reconstruction, or the Munitions Supply Laboratories (Technical Information Section), Maribyrnong, Victoria.

HERRIOTT, ROGER M., ANSON, M. L., AND NORTHERP, JOHN H. Reactions of H with enzymes and proteins. (OSRD Report 3653.) Off. Pub. Bd., Report, PB 5935. 46 pp. Price: Microfilm, 50c.; Photostat, \$4.00.

Thirteen proteins have been studied in respect to their reaction with H (mustard gas). In all cases reaction appears to occur primarily with the protein carboxyl group. Treatment of proteins that contain tyrosine or tryptophane with H reduces the so-called phenol colour value (Folin's reagent), associated with the tyrosine phenolic group, but it is found that there are not enough H residues bound to account for the loss of both carboxyl and tyrosine groups, and it is necessary to suppose either (a) that the reaction of H with the carboxyl group reduces the phenol colour, or (b) the reaction of H with the phenolic group affects the ionization of certain carboxyl groups. The bulk of the evidence favours (a), and the most plausible assumption is that H forms an ester with the carboxyl groups of tyrosine and that this ester has in consequence a reduced phenol colour. Among the thirteen proteins studied are seven enzymes (crystalline swine pepsin and pepsinogen, chicken pepsin, crystalline chymotrypsin, yeast sucrase and crystalline yeast hexokinase). Since within the entire group the rates of reaction vary only by the relatively narrow range of 100:1, the results do not support the theory that H vesication is attributable to injury of a specific enzyme, unless it be supposed that some enzyme of great reactivity is involved. Tables, charts and references. This is a progress report under contract with the Rockefeller Institute for Medical Research.

KISTIAKOWSKY, G. B. The study of the mechanism of the physiological action of mustard by means of radioactive sulphur. (OSRD Report 451.) Off. Pub. Bd., Report, PB 6579. 1942. 18 pp. Price: Microfilm, 50c.; Photostat, \$2.00.

First progress report of work done to March 6, 1942, by A. R. Moritz, F. C. Henriques, junior, and W. G. Schneider, of the Harvard Medical School. The method used in the study of the physiological action of mustard by means of radioactive sulphur is described. Accurate methods have been worked out to determine the quantity of mustard penetrating animal skin and to separate this into certain fractions: (a) unchanged mustard and its oil soluble reaction products; (b) hydrolysed mustard (for example, thiodiglycol *et cetera*); (c) reaction products unextractable with hot

chloroform; (d) material transported from the site of application. Animal experiments on two shoats have led to these conclusions: Large fraction of mustard applied to the skin in open air is evaporated and lost before it penetrates the tissues. Mustard penetrates a young pig's skin at a constant rate of about 0.05 milligramme per square centimetre per hour. Of the materials penetrated, about 60% are transported away by the body fluids. About 25% are rapidly transformed into a non-extractable form which remains unchanged as long as 24 hours after exposure. The rest appears as unchanged mustard and as water-soluble hydrolysis products. After 24 hours only the non-extractable material remains in the skin tissues. Although neither unchanged mustard, its soluble hydrolysis products nor its non-extractable products were recovered in tissues deeper than 1.5 millimetres below the surface, there was severe irreversible injury to a considerably greater depth. Report contains tables of results obtained.

KOONTZ, A. R., AND MOULTON, C. H. Avertin and acacia-glucose solution in the treatment of lung oedema. (Edgewood Arsenal Technical Report 194.) Off. Pub. Bd., Report, PB 6319. 1935. 17 pp. Price: Microfilm, 50c.; Photostat, \$2.00.

The work described in this report was undertaken in order to further test the efficacy of an acacia-glucose solution, given intravenously, in combating pulmonary oedema caused by phosgene poisoning (previous experiments not being considered conclusive), and of combining this method with the use of avertin narcosis. It was found that the oedema of the lungs produced by phosgene poisoning in dogs may be materially reduced by intravenous injections of an aqueous solution of 35% acacia and 25% glucose, by avertin narcosis, and by a combination of the two methods. The combined method, as used in these experiments, proved the most efficacious. Bibliography and tables are included.

KOONTZ, A. R., AND MOULTON, C. H. Avertin narcosis in the treatment of lung oedema induced by chemical irritation. (Edgewood Arsenal Technical Report 65.) Off. Pub. Bd., Report, PB 6268. 1931. 33 pp. Price: Microfilm, 50c.; Photostat, \$3.00.

The oral administration of calcium chloride and calcium lactate to rabbits and dogs and the use of avertin narcosis in dogs were tried for the treatment of the oedema of the lungs caused by gassing with phosgene. The animals were gassed in pairs, with the same concentrations, for the same periods of time, one animal of each pair being treated and the other kept as a control. A study of the lungs of the animals showed that the oedema was somewhat decreased by the oral administration of calcium chloride and calcium lactate, but the mortality rate was not reduced. In the dogs treated by the induction of avertin narcosis the amount of oedema of the lungs was considerably decreased, and the mortality rate was one-third less in the treated animals than in the controls. Illustrations.

KOONTZ, A. R. Pathology of heat and mustard burns: a comparison. (Edgewood Arsenal Technical Report 292.) Off. Pub. Bd., Report, PB 6307. 1939. 54 pp. Price: Microfilm, \$1.00; Photostat, \$4.00.

Report of four series of experiments made to compare the pathology of heat and mustard burns, with a view to determining if the same methods of treatment are applicable to the two types of burns. Results obtained in these experiments indicate: (i) mustard burns differ from heat burns in that the inflammatory reaction extends farther beyond the burned tissues; the area surrounding the burn is somewhat more moist, the leucocytic reaction is somewhat more diffuse, and the scar is somewhat thinner; (ii) there is no demonstrable difference in the condition of the underlying blood capillaries in the two types of burns; (iii) the healing times of the two types of burns are practically the same; (iv) the same treatment may be applicable to both heat and mustard burns. Outline of experiments, general procedure, results, bibliography and photographs are included in the report.

LINTRICUM, E. S. Instructions for first-aid treatment of persons injured by chemical warfare agents and certain other chemicals. (Edgewood Arsenal Technical Report 39.) Off. Pub. Bd., Report, PB 6255. 1930. 22 pp. Price: Microfilm, 50c.; Photostat, \$2.00.

This circular provides information for use at depots, projectile filling plants, manufacturing plants *et cetera* on first-aid treatment of gas casualties. For each individual chemical the properties, poisoning symptoms and treatment are given.

LUSHBAUGH, CLARENCE C., *et alii*. The intrapulmonic accumulation and effects of inhaled lubricating oil and S.G.F. No. 1 oil in monkeys, to January 3, 1945. (OSRD Report 4639.) Off. Pub. Bd., Report, PB 5906. 1945. 18 pp. Price: Microfilm, 50c.; Photostat, \$2.00.

The experimental work reported here was initiated because of the possible serious effects of continued breathing of oil screening smokes by military personnel. Monkeys were exposed for thirty minutes of every hour for one hundred

<sup>1</sup>Supplied by the Information Service of the Council for Scientific and Industrial Research.



consecutive days to two oil clouds, one containing ordinary motor lubricating oil and the other S.G.F. No. 1 oil. Microscopically, very little inflammatory reaction occurred that could be attributed to the oils. The fibroblastic reaction to the oil was slight. Therefore the conclusion is drawn that similar exposure of men would be without serious pulmonary effects. Tables and charts. This is a progress report under Contract NDCrc-132 with the University of Chicago.

McMASTER, PHILIP D., AND HOGEBLOOM, GEORGE H. Changes in the circulation and in the permeability of vessels within and about mustard gas and Lewisite lesions of rabbit skin, to April, 1945. (OSRD Report 5026.) Off. Pub. Bd., Report, PB 5871. 1945. 51 pp. Price: Microfilm, \$1.00; Photostat, \$4.00.

Contents: 1. The maintenance of the circulation of blood in and about developing mustard gas and Lewisite lesions of rabbit skin. 2. Changes in the permeability of blood vessels within and around developing mustard gas lesions of rabbit skin (resulting peculiarities in the shape and character of the lesions). 3. The development of stasis within mustard gas lesions several hours after application of the vesicant. 4. The relative non-irritancy of the oedema fluid. 5. The convection of mustard gas vapour from liquid contamination changes the shape of mustard gas lesions of skin. 6. Is there physiologically significant lymphatic drainage of irritant substances from mustard gas lesions of skin? This is a progress report under contract with the Rockefeller Institute for Medical Research. Diagram and photographs are included.

NORTHROP, JOHN H., et alii. Detection of HS, M-1, ED or PDA with trained dogs or rats. (OSRD Report 493.) Off. Pub. Bd., Report, PB 6002. 1942. 12 pp. Price: Microfilm, 50c.; Photostat, \$1.00.

Report of progress to March 31, 1942, of experimentation conducted at the Rockefeller Institute for Medical Research. This report describes a method by which vapours of certain toxic gases can be detected in high dilution by means of trained rats or dogs. The dilutions are far below the range of the human sense of smell; in the case of HS they range down to 0.2 microgramme per litre. As between HS, M-1 and ED or PDA differentiation is possible provided that the vapours are not too concentrated. Rats or dogs may be trained to refuse meat which has been exposed to low concentrations of these gases. The method of training the animals is described, and results of tests are tabulated.

ORMSBEE, RICHARD A., AND HENRIQUES, FREDERICK C., JUNIOR. Progress report on "a study of the fixed mustard in skin tissues". (OSRD Report 1825.) Off. Pub. Bd., Report, PB 6533. 1943. 14 pp. Price: Microfilm, 50c.; Photostat, \$1.00.

An investigation of the nature of the constituents of pig skin combining with mustard to form "fixed mustard", and the linkages involved are presented here. Pig skin treated 24 hours previously with mustard containing radioactive sulphur was excised and submitted to a fractionation procedure. The various fractions were then analysed for radioactive sulphur in order to determine the distribution of the fixed mustard. The results obtained indicate that the majority of the fixed mustard is combined with the skin proteins insoluble in weak salt solutions. At least three types of linkage appear to be involved in the combination of mustard with these proteins: linkages split in the cold at a mild alkaline reaction (pH 9.0) to yield a dialyzable radioactive material amounting to approximately 40% of the total, linkages split by autoclaving to yield a dialyzable radioactive material amounting to approximately 20% of the total, linkages not split by either of the above treatments, approximately 40% of the total. The possible groupings in proteins that could react with mustard to form linkages having these properties is discussed. Calculations are also given which show that only 1% to 2% of the total available skin protein groupings can have reacted with mustard even in skin which has been severely burned. No evidence could be obtained from phosphorus analyses or the use of phosphatase to indicate that phosphate groups are especially concerned in the fixation of mustard by skin tissue. Tables.

SMALLER, BERNARD, AND KENNEDY, MARY M. Pre-selection test for susceptibility to aeroembolism. (Army Air Forces. Engineering Division. ENG-M-49-695-27.) Off. Pub. Bd., Report, PB 5136. 1943. 14 pp. Price: Microfilm, 50c.; Photostat, \$1.00.

A simple chemical method for predetermining individual susceptibility of an individual to aeroembolism is described. Data and results of tests are shown in tables and graphs.

OSTERHOUT, W. J. V. The toxic action of mustard on *Nitella*. (OSRD Report 4272.) Off. Pub. Bd., Report, PB 5486. 1942. 15 pp. Price: Microfilm, 50c.; Photostat, \$1.00.

Cells of the fresh-water plant, *Nitella* (smooth chara), offer special advantages for studying the action of mustard gas on living organisms. Experiments with these cells indicate that the toxic effects are produced by action upon the non-aqueous surface layer of the protoplasm. Under

the influence of mustard gas the surface layer becomes permeable, the cell loses its turgidity and electric potential and finally dies. As death makes the protoplasm completely permeable, we may use this as a criterion of death. Mustard gas also produces alterations in the aqueous parts of the cell in so far as it lowers the pH value of the cell sap.

PINSON, ERNEST A. Army Air Forces—Eastman Night Vision Tester (Model 2). (Army Air Forces. Engineering Division. ENG-M-695-12L.) Off. Pub. Bd., Report, PB 6947. 1943. 11 pp. Price: Microfilm, 50c.; Photostat, \$1.00.

Report on the training of Flying Training Command personnel in the operation of the subject tester, and the proper administration of night vision tests. The score distribution of 228 cadet applicants is plotted in Appendix 1. Appendix 2 is a discussion on the size of character used in the test.

PINSON, ERNEST A. Dark adaptation in Army Air Corps personnel. (Army Air Forces. Experimental Engineering Section. EXP-54-653-51.) Off. Pub. Bd., Report, PB 5117. 1941. 14 pp. Price: Microfilm, 50c.; Photostat, \$1.00.

Two hundred and four Air Corps officers and enlisted men stationed at Langley Field, Virginia, were subjects of a study to determine the night visual efficiency of United States Army Air Corps pilots and combat crew members. The dark adaptometer described by Hecht and Schear (*J. Optic. Soc. Amer.*, Volume XXVIII, 1938, page 269) was used. Graphs and tables indicate average dark adaptation, average values for officers and enlisted men, and relation between minimum cone thresholds and minimum rod thresholds.

PINSON, ERNEST A. Dark adaptation in Army Air Corps pilots. (Army Air Forces. Experimental Engineering Section. EXP-M-54-653-30.) Off. Pub. Bd., Report, PB 5110. 1941. 4 pp. Price: Microfilm, 50c.; Photostat, \$1.00.

Dark adaptation tests were carried out on thirty commissioned Air Corps officers, ranging in age from 20 to 50 years. The visual adaptometer and technique of measurement employed commonly in this field of research and described by Hecht and Schear (*J. Optic. Soc. America*, Volume XXVIII, 1938, page 269) were used. Table I: Logarithm of threshold intensity (micromicrolambers) at end of thirty minutes' dark adaptation indicates that some degree of dark adaptation deficiency was generally prevalent in subjects over forty years of age.

PINSON, ERNEST A., CHAPANIS, ALPHONSE, AND ROUSE, RICHARD O., JUNIOR. The effect of moderate anoxia on contrast sensitivity at low levels of illumination. (Army Air Forces. Engineering Division. ENG-49-695-12M.) Off. Pub. Bd., Report, PB 6948. 1943. 9 pp. Price: Microfilm, 50c.; Photostat, \$1.00.

Purpose of this study was (i) to investigate a method of demonstrating the effects of moderate anoxia on contrast sensitivity at low levels of illumination, and (ii) to measure differences in contrast sensitivity at low levels of illumination at simulated altitudes of 10,000, 12,000 and 15,000 feet with and without supplemental oxygen. Appendices present apparatus, including Luckiesh-Moss low-contrast chart, and statistical analysis of the data, including tables.

PINSON, ERNEST A. Test for demonstration of the effects of anoxia on vision. (Army Air Forces. Engineering Division. ENG-M-49-695-12H.) Off. Pub. Bd., Report, PB 6945. 1943. 3 pp. Price: Microfilm, 50c.; Photostat, \$1.00.

This report describes a test with which the effects of the moderate anoxia experienced at 12,000 and 15,000 feet may be demonstrated. Results of visual test with Luckiesh-Moss low-contrast test chart when breathing atmospheric air as compared with breathing oxygen at 12, 15 and 18 thousand feet are given in a table.

RANDALL, FRANCIS E. Articulated plastic manikin standards. (Army Air Forces. Engineering Division. ENG-49-695-28.) Off. Pub. Bd., Report, PB 6954. 1943. 26 pp. Price: Microfilm, 50c.; Photostat, \$2.00.

Two thousand nine hundred and sixty-one Aviation Cadets were studied anthropometrically and reported in Memorandum Report No. EXP-M-49-695-4C, entitled, "Anthropometric data on Army Air Forces flying personnel", dated October 3, 1942. The data obtained was analysed on the basis of stature range to produce three basic-size standards, and three plastic manikins were constructed according to the three size specifications. Values and distribution for each manikin type and illustrations are included.

RANDALL, FRANCIS E. Prone position. (Army Air Forces. Engineering Division. ENG-49-695-32-P.) Off. Pub. Bd., Report, PB 6964. 1944. 8 pp. Price: Microfilm, 50c.; Photostat, \$1.00.

Since experimental evidence indicates a pilot is able to withstand relatively higher accelerative forces in a prone position than he can in the sitting position, tests were conducted to determine relative comfort, mechanical forces applicable and visibility attained in a prone position with a 10° rise on the trunk and one, two, three and four inch sharp rises in the upper chest region. Tables, charts and diagrams illustrate findings.



## British Medical Association News.

### ANNUAL MEETING.

The annual meeting of the South Australian Branch of the British Medical Association was held at the Verco Theatre, Institute of Medical and Veterinary Science, Adelaide, on June 26, 1946. Dr. BRIAN H. SWIFT, the President, in the chair.

#### Presentations to Sir Henry Newland.

Before the formal business of the meeting Dr. Brian Swift made a presentation to Sir Henry Newland on behalf of members of the Branch. Dr. Swift spoke in the following terms.

You will have read on the notice paper calling this meeting that there is a line stating "Presentation to Sir Henry Newland"; this is not quite correct, but should read, "Presentations to Sir Henry Newland". Some months ago several members of the Branch thought that they would like to present Sir Henry with his portrait as a token of appreciation of his work with the Branch. Sir Henry was approached and agreed to sit for his portrait; members were circularized and a splendid response was forthcoming. The portrait has been painted by Mr. Max Meldrum in Melbourne. You will see therefore that tonight is not just another annual general meeting, but a very great occasion, an occasion on which members have gathered together to pay tribute to a man who has done so much for us—not only as a doctor, but in the wider sense as a man and a citizen.

I will ask Dr. F. S. Hone and Dr. I. B. Jose to make some introductory remarks before the presentation of the portrait.

Dr. F. S. Hone used the following words:

The best introduction to tonight's ceremony is the extract from our annual report. "In response to a strong feeling by members of the Branch, the Council felt that the time had arrived when the services of Sir Henry Newland to the Branch and to the profession throughout Australia should be recognized in a tangible way. For over 48 years Sir Henry has been actively associated with the work of the Branch, and it was considered opportune for the Branch to show its appreciation of his services. An excellent response has been made by members to the suggestion of the Council and a presentation will be made to Sir Henry at the annual meeting on June 26, 1946."

The fact that the response to the Council's request has been so emphatic is the best testimony to the general sympathy with this presentation, and I am sure I am speaking for all the members when I express our thanks to the incoming president, Dr. Mallen, for initiating this movement, and to the immediate past president, Dr. Jay, and our retiring president, Dr. Swift, for their energy and interest in supporting this movement to honour Sir Henry Newland. The year 1896 was a wonderful year for Hal Newland, for in that year he was a member of the Adelaide crew that won the inter-university boat race, and he graduated in medicine and surgery at the Adelaide University, equal with Bronte Smeaton for top place, and co-winner of the Everard Prize that year. The year 1946 has been a still more wonderful year for Sir Henry Newland, for as president of the Adelaide University Boat Club he presided at the dinner that was held for the four boating university boat crews fifty years ago to the day from the time when he himself had rowed in the crew, and on the same day he learned that he was a proud grandfather of a grandson who is, I understand, to be called Henry Simpson Newland, and I have the best authority for the statement that the grandson is the living image of the grandfather! This year, too, he is celebrating the jubilee of his graduation in medicine. Tonight we, as members of the South Australian Branch of the British Medical Association which he joined nearly fifty years ago, meet to join in this presentation to him as an evidence of our admiration and esteem for the services he has rendered during this fifty years to our association, to our profession, and to our community and our nation.

Purely by virtue of my seniority I am fortunate enough to be privileged to speak first on behalf of my fellow members to assure him of the sincerity of our gratitude and our good wishes for his future. If to some of the younger members I seem to be prolix in my remarks, I beg that they will realize that this is not due merely to the customary garrulity of senescence, but also to the fact that we were medical students together, and that for some years later we were closely associated in the work of the association, and that I want them who may have known him only

as a dreaded examiner or as one who has wrapped himself in a mantle of aloofness, especially since his deafness attacked him, to know how fitting it is that we should make this presentation. For it is a fact that ever since he was appointed secretary to the association in 1909, and even in his preparation in the years before that for his life work, he has devoted himself to working (often with considerable self-sacrifice) in the interests of the association. In his presidential address in 1920 on Sir Charles Hastings, the founder of the British Medical Association, he pointed out that Hastings desired that the efforts of the association should be expended on two main objects for the benefit of its members: (a) to promote the study and advancement of medical science, (b) to ameliorate the conditions of medical practice by means of medico-political activity, by organization and by defence. Sir Henry Newland has carried out in his own person both these objects.

Ivan Jose will speak of his claims as a surgeon, and it is my privilege to dwell on his services to our association and the inspiration he has given by his example to us as individuals to uphold the highest ideals of our profession. For his recognized deservedness in this presentation has not come by chance or by good fortune, but by steady application to duty, unflinching industry, wide vision combined with meticulous attention to detail. He could dream and not make dreams his master, think and not make thought his aim, meet with triumph and disaster and treat these two imposters just the same. These qualities were evident in his student days, but they became more and more emphasized as he has advanced in years and in experience, and in rereading for the purposes of this address some of his earlier utterances, I have been struck by the tremendous advances shown in his Listerian Oration in 1934 and his presidential address on Sir Charles Hastings in 1920.

The greater part of the first ten years after graduation was spent in England, and were further years of preparation, and if you wish to realize something of the influence exerted by those years you need only read the Listerian Oration which he delivered here in 1935. Shortly after his return to Adelaide to work in association with the late Dr. Humphrey Martin, I can remember the latter saying to me: "I have got a young fellow with me who is a glutton for work and never goes out without a book under his arm."

In 1909 he became honorary secretary to our Branch of the association, and during the next few years I was in close and intimate contact with him in association work. In those days our Branch was a small and feeble body. We had no paid secretary, our council meetings were held in his rooms, our membership was little more than a hundred with very little influence on the profession or the community. As our local medical school had only been in existence a few years (Newland's year was the eighth lot of local graduates), the majority of practitioners had come from abroad, and had no close local associations. Newland deliberately set out on a campaign to make every medical practitioner in the State a member of the association, even those on whom some leaders might look askance. For as he said to me more than once: "If they are members of our association we have much more control over their activities." As a natural consequence, the association grew rapidly in numbers, discipline and influence, and by 1914 quite 99% of the practising profession in this State were members of the association. That has held good ever since.

In 1914 came the first World War. Our generation had grown up in isolation from world affairs and ignorant of any thought of war. Many members joined up from a spirit of adventure or other causes. Newland was gaining an established position in his profession, and was doing a wonderful job for the association. When discussing with him his reasons for volunteering to go overseas, he said something to the effect that he had been given such wonderful opportunities for developing his powers that he felt it incumbent on him in gratitude to offer those trained powers in service. Ivan Jose will speak of the way those surgical powers were used and developed.

On his return from abroad in 1919 he was elected vice-president of the association, and later in the year Sir Joseph Verco, who had been filling the gap as president during the war, resigned, and Newland was elected president in his place, and the following year he joined the late Dr. W. T. Hayward as the local representative on the Federal Committee of the Branches which had been established just before the beginning of the war. The conjunction of these names is of interest, as our presentation tonight links up Sir Henry once more with Sir Joseph Verco and Dr. W. T. Hayward in being the only three members so far to be given by the association an oil painting of themselves as a recognition of their services to the association. Sir Joseph

Verco was largely instrumental in founding the Medical School, and was lecturer in medicine from the beginning of the school till 1915, Dean of the Faculty and President of the Branch throughout the war. Dr. W. T. Hayward had been treasurer of the association for more than twenty years, and was instrumental in proposing and founding the Federal Committee, of which he became the first chairman. Newland joined him as our State representative in 1920, and has continued to act for us ever since, and thus has served us in this larger field for twenty-five years.

On the death of Sir George Syme in 1929, he succeeded him as chairman, and when the Federal Committee was merged into the Federal Council in 1933 he continued to act as chairman of that body. In his position as chairman he cannot speak for himself, but I have a recent letter from Dr. Archdall, the Editor of THE MEDICAL JOURNAL OF AUSTRALIA, in which he says that he "always seems to have a very clear grip of the questions that come up for discussion, and I must say that his energy and tirelessness are amazing. Please refer to the part that he has taken as the Federal Council representative on the Central Medical Coordination Committee. Further, I do think that some reference should be made to the great deal of time he has given to the affairs of the Federal Council in connexion with conferences and deputations to the Federal Government at Canberra and in other places. At the Adelaide Congress in 1937 he, as you know, received the gold medal of the British Medical Association in Australia".

Few of us know the trouble he has taken in the past few years in standing up for the welfare of the association and the profession in Australia since the Commonwealth Government propounded its ideas on national medical service. All to whom I have spoken have been, like Dr. Archdall, amazed at his tirelessness and his abounding energy, and all to whom I have spoken are agreed as to his honesty of purpose, his unflinching determination to maintain justice for the profession combined with adequate service to the public, so much so that at times I think that if there were any truth in that 400-year-old story of Queen Mary of England that after her death the word Calais would be found written on her heart, the same thing might be true of Sir Henry Newland with the substitution of the words British Medical Association for Calais. Throughout all these latter years of difficult negotiations with politicians whose aims and methods are alien to his scientific spirit, he has been the supreme example to us of the man

Who never turned his back but marched breast forward,  
Never doubted clouds would break,  
Never dreamed if right were worsted wrong would triumph,  
Held we fall to rise, are baffled to fight better, sleep to wake.

As I think over his activities on our behalf in these last few years, I realize that we have been blessed beyond measure and quite possibly beyond our deserts in having as a leader of the profession in Australia in this crisis of our history, a man of his calibre, his attainments, his integrity and unflinching tenacity of purpose. Side by side with these medico-political activities has gone his work in connexion with THE MEDICAL JOURNAL OF AUSTRALIA. He was one of the original debenture holders of the company, and for the past twenty years has been a director of the company.

And side by side with these wider Australasian activities has gone the same intense devotion to local interests. He was the founder of the British Medical Hall Company in 1913, its first honorary secretary and one of its earliest directors. For years past he has been chairman of directors. He was largely instrumental in securing the Hindmarsh Square property for our local headquarters, and when that was subsequently sold he personally bought that block of land on North Terrace which we at present hold for our future headquarters, and he still lives in hopes of seeing our Branch headquarters permanently located in the building which has been proposed to be erected there and which alas is so long delayed. May we hope that this presentation may be followed up as part of our policy of reconstruction, with the rehabilitation of our Branch.

Of his services to the Medical School and the Royal Adelaide Hospital, Ivan Jose will speak, but mention must be made of his activities in connexion with Saint Mark's College, of which he was one of the foundation members and later chairman; of his presidency of the South Australian Tuberculosis Association; of his intimate connexion with the Flying Doctor Services in which he is a past president of the federal council and a past president of the South Australian section; of his chairmanship of the Friends of the Public Library; of his share as founder of the Pioneers' Association, of which also he is now a past

president; of his participation in the Royal Society of Saint George and other patriotic associations; so that he is now a past president of the Royal Empire Society and chairman of the Council of Empire Societies and of other activities too numerous to remember.

Quite early in my career I can remember him beginning a speech with the quotation from Ecclesiasticus: "Let us now praise famous men, and our fathers who begat us; leaders of the people by their counsels, and by their knowledge of learning meet for the people, wise and eloquent in their instructions." The first time I heard it, it came as a shock to me, for I had never thought of him as a student of the Apocrypha. But I found out afterwards that he quite often quoted it. He concludes his eulogy of Sir Charles Hastings in 1920 with the words: "If in obeying the Biblical instruction to praise famous men I have seemed to some to exaggerate the value of Hastings's services in founding and fostering the association, while not admitting the impeachment, I can agree that Hastings builded better than he knew." This quotation seems to me to serve as a fitting motto to apply to him in our presentation tonight.

For the spirit of that quotation harnessed to his tirelessness and pertinacity serves to explain much of his ever-spreading activities and influence. He was nurtured and brought up in such a tradition. If you read his father's memoirs and the references there to his grandfather, the pioneer of Encounter Bay, if you think of how he made his home there, of the memorial to his grandfather in the church that he built at Victor Harbour, the exact replica in outward form of the Memorial Chapel of Marlborough College, of his inaugurating and carrying through the movement for an oil painting of Professor Watson, his old professor of anatomy, of his selection of Sir Charles Hastings, the founder of the British Medical Association, as the subject of his first presidential address in 1920, of his address the next year on celebrities of the medical profession, of his instituting the annual Listerian Oration in 1934, of his selection of Lord Lister's life as his subject, of his presentation of the oil painting of Lord Lister to hang in the Lister Hall, and of numerous other similar instances, you will realize how he has carried the spirit of that quotation into his life work and how fitting it is that we, his colleagues, should in his jubilee year praise him as a famous man—a leader of the people by his counsels and by his knowledge of learning meet for the people, wise and eloquent in his instructions.

Dr. Ivan B. Jose spoke as follows:

Tonight I am privileged to speak on behalf of those of Sir Henry's surgical colleagues and former students, members of the British Medical Association, who are here to do him honour.

There are only three present tonight who completed their graduation in medicine in the last century or nearly fifty years ago (Dr. Hone is one of them), but there are many who will, in their lifetime of up to the next fifty years, personally remember this occasion, and for those to come this portrait will depict to them one of Australia's leading surgeons of his time, an inspiration to Australian surgeons of the future.

Though it is in the art and practice of surgery that Sir Henry has excelled, an art which requires long and faithful service, dogged perseverance, a stout heart and dainty touch, one has also ever admired that unbounded stamina and energy which has enabled him to take such a wide and leading part in matters civil and philanthropic. To back up these traits of character, may I recall an incident which happened about twelve years ago tomorrow. It was a cold frosty morning and the occasion of the great golf contest, which will again take place tomorrow. At an unusually early hour, before even the official starter had arrived, Sir Henry put in his card, and duly at the nineteenth was heard to enthuse on the beauties of driving off the first into the sunrise, and to deplore the difficulties of putting on the frost-bound green.

In the early days of this century, Sir Henry had completed two or three years of post-graduate study abroad. He then obtained a coveted post of registrar at the London Hospital, which, coupled with being a member of Leander, was a certain stepping-stone to the honorary staff of the hospital.

He, however, for personal reasons, preferred to return to his home State and commenced practice as assistant to the late Dr. Humphry Marten. Then followed another grand tour, including a stay at Johns Hopkins Hospital, where he met among others Cushing and Hugh Young. In 1907 he was appointed honorary assistant surgeon at the Children's Hospital, and in the following year became honorary surgeon, which position he held for twenty years before becoming consultant surgeon to that institution. It was here, with

cleft palates and hare-lips, he developed an aptitude for plastic surgery, with which he did such sterling service for the disfigured soldiers of all Australia at the end and after the last war, and earned world-wide appreciation of his work.

In 1908 he also became the first radiologist to the Adelaide Hospital, and later in the same year (1908) he became assistant surgeon to the Adelaide Hospital, and on his return from the war in 1919 became honorary surgeon until 1933.

He has ever been a pioneer in surgical methods and techniques. Many procedures he has been the first to use in this State. Sir Henry was one of the first to use radium and the first to possess a catheterizing cystoscope. He was the first to collect the separate urines from each kidney with the old segregator. He was also the first to perform a lobectomy and the first to tie a patent *ductus arteriosus*.

His sound anatomical knowledge and operative dexterity are emphasized by his preeminence in plastic surgery and brain surgery. For his surgical prowess and standing he has been awarded the honorary Fellowship of the Edinburgh Royal College of Surgeons and the American College of Surgeons.

The 1914 war came at an opportune time for him to give, as a trained surgeon, his best service to the forces. He left Australia as surgeon in the First Australian General Hospital for Egypt, Lemnos and Gallipoli. He later was officer commanding the First Australian Casualty Clearing Station in France, and later surgeon specialist to the Third Australian Casualty Clearing Station at Trois Arbres during the days of the second Ypres, Polygon Wood and Passchendaele. Later he went to England and worked with Gilles at Sidcup (on plastic surgery) as commanding officer of the Australia section. The quality of his work throughout the war was justly recognized by a mention in dispatches and a D.S.O. in 1918 and a C.B.E. in 1919, and by his becoming representative of the Australian Army Medical Corps on the Council of Consultants at the War Office and at the Paris Inter-Allied Surgical Conference of 1919.

There are few here that have not been at some time his students; there are none that have not learnt much from him. He has been an extremely great influence throughout his connexion with this Medical School. He was ten years lecturer in the surgical diseases of children (1912-1922) and eight years lecturer in surgery (1927-1935), in addition to being lecturer in clinical surgery (1919-1926) and in operative surgery (1920-1936).

Since his retirement from the Royal Adelaide Hospital in 1933, he has continued to be a clinical examiner in all the university surgical examinations, and I shall always be grateful for his ever-ready help and advice in the management of the surgical teaching of this university during this period.

During this war, in spite of his arduous duties with the Federal and State Councils of the British Medical Association, he has given great service to the Royal Adelaide Hospital and surgical teaching by returning to do hospital work during the absence of members of the honorary staff on active service.

He has taken a leading part in the foundation of the Royal Australasian College of Surgeons. He was a founder, and on the death of Mr. Syme he became president, and has been a member of Council continuously until he retired this year.

His interests outside his profession and the leading part he has taken in innumerable societies, committees and movements show not only his keen interest in his fellow man, his sense of duty and love of country, but also the esteem with which he is regarded by his fellow citizens and the value placed on his judgement and opinions.

In the long-distant future those who view this portrait might well say as was once said of Sir James Paget: "He had the air of a man who represented a great profession and was very proud of that honour. Among all his innumerable friends, there was not one whom he envied or would have changed places with; he was a surgeon and a man of science, and one cannot imagine him wishing to be anything different." Sir Henry, on behalf of the members of this Branch, I wish you long life and happiness.

Dr. Brian Swift then spoke as follows:

Before presenting Sir Henry with his portrait I should like to add a few remarks. I first met Sir Henry when he used to play cricket at my father's house in Victoria Square; Charles Moore's shop now occupies that position. He was a medium-fast bowler with a long run, and he always bowled with his tongue poked into his cheek, I don't quite know why.

Since that time Sir Henry has always been very kind to me, and whenever advice was sought a very sound answer was forthcoming. His advice has always been most helpful, and I am very sure that every member of the Council will agree with me that when Sir Henry had anything to say in a matter during a discussion in Council his remarks were always listened to with the greatest respect, and that the Council has always benefited by them.

The two previous speakers have told us what type of a man Sir Henry is, what a citizen, and what a great surgeon, and I must also add what a wonderful member of our association.

Turning to Sir Henry Newland, Dr. Swift used the following words:

Sir Henry Simpson Newland, on behalf of the members of the South Australian Branch of the British Medical Association I have the honour and privilege to present to you your portrait as a small appreciation from them of the work which you have done during the last fifty years. I now ask you, sir, on their behalf, to accept this portrait.

Dr. Swift also presented Sir Henry Newland with a salver and with a porringer and spoon for Henry Simpson Newland, Junior.

Sir Henry Newland replied in the following terms:

Mr. President, Ladies and Gentlemen, this is the greatest occasion of my professional life. What reward can be more choice in the twilight of a career than the approbation of one's peers? Were I to accept merely as a personal tribute the words of praise which have fallen from the lips of Dr. Hone and Mr. Jose and which you have echoed by generous manifestations of your appreciation and goodwill, I would be bereft of utterance. I feel, however, that I am justified in assuming that by virtue of certain pioneering work of half a century of general and surgical practice, and of years given to medico-political activities, I stand here and represent the great and goodly company with whom it has been my good fortune to live and work. For it is they who have put me where I am.

I was born lucky. My father and my paternal grandfather were men who had a great capacity for work, and who occupy a distinguished place in the history of South Australia. In addition to a fine parentage I came under the influence of some splendid men at Saint Peter's College. The same good fortune attended me during my medical course at the University of Adelaide, and later on at the great London Hospital. Their fine example taught me that work, method and thoroughness are the master words in the pursuit of a medical career. If I have handed on any intellectual heritage to my old students, dressers and younger colleagues, whose work and whose achievements have been one of the joys of my life, it is derived from that which I received from many distinguished masters in the realms of medicine and surgery.

I have been fortunate, too, in the loyalty, at all times, with which the Council of the South Australian Branch of the British Medical Association has supported me as President of the Federal Council. This responsible position entails constant attention to medico-political questions, and naturally and rightly invites criticism. I have not always been right, nor have my critics. An equally great measure of loyalty has been accorded me by my colleagues on the Federal Council. The harmony which has prevailed has never, even during the most tense debates, been seriously disturbed.

I trust, ladies and gentlemen, that, in these few words, I have given some measure of credit to those who have put me in the very enviable position I occupy tonight. Believe me, one and all, I regard myself as most highly honoured, and I extend to you my heartfelt thanks for your dual gift of my portrait and of the choice silver salver.

In accepting the gift to his first grandson of a silver porringer by the members of the Branch, Sir Henry Newland said: "On behalf of Henry Simpson Newland, Junior, I have much pleasure in accepting your gift, and in acknowledging the kindly thought which prompted it. The President of the Branch [Dr. Brian Swift] brought the youngster into the world. It must surely be a unique combination of events for a president in the space of a week to present a member with his portrait and with a living image in the form of a grandson."

#### Annual Report of the Council.

The annual report of the Council was adopted on the motion of Dr. D. R. W. Cowan, seconded by Dr. C. F. Drew. The report is as follows.



At the annual general meeting held on June 28, 1945, officers and members of the Council were elected as follows:

**President:** Brian H. Swift.

**Vice-President:** L. R. Mallen.

**Honorary Treasurer:** P. T. S. Cherry.

**Honorary Medical Secretary:** R. F. West.

**Ordinary Members of Council:** G. Brown, N. R. Bennett, J. R. Cornish, F. F. Heddle, G. Wien Smith.

At a meeting of the Council held on July 5, 1945, the following subcommittees were appointed to act during the year:

**Scientific:** B. H. Swift, G. Brown, Honorary Medical Secretary.

**Contract Practice and Medical Planning:** H. M. Jay, R. John Verco, E. L. Symons, C. H. Schafer, J. R. Cornish, N. R. Bennett, L. R. Mallen, F. F. Heddle.

**Ethics:** G. Wien Smith, E. F. West, B. H. Swift, G. Brown, P. T. S. Cherry, H. M. Jay, R. F. West.

**Parliamentary Bills and Publicity:** B. H. Swift, H. M. Jay, Sir Henry Newland, R. John Verco, P. T. S. Cherry.

**Library:** B. H. Swift, Sir Henry Newland, R. F. West.

**Rehabilitation and Reestablishment:** B. H. Swift, H. M. Jay, Sir Henry Newland, R. John Verco, E. F. West, J. R. Cornish, L. R. Mallen, P. T. S. Cherry, N. R. Bennett.

**Tuberculosis:** H. M. Jay, D. R. W. Cowan, J. L. Hayward, K. S. Hetzel, P. S. Messent.

The President, Immediate Past President, Vice-President, Honorary Treasurer and Honorary Medical Secretary are ex-officio members of all subcommittees.

#### Monthly Scientific Meetings.

The activities of the Branch in this direction have, owing to the war, been curtailed, but in spite of this every effort has been made by the Council to carry on regular meetings. Although many of our members were serving with the armed forces, the attendances at the meetings have been satisfactory. It was not felt possible to have the Listerian Oration this year, but the Council hopes to resume these orations next year. The Council desires to place on record its appreciation and thanks to all those who contributed papers *et cetera* and those who in other ways helped to make the scientific meetings possible during the year.

The following programme was carried out:

July 26, 1945: Film on "Peptic Ulcer", with talk by Dr. H. A. McCoy from the radiological aspect with demonstration.

August 23, 1945: Address by Squadron-Leader N. Rosenthal on "Films in Instruction: Their Use and Misuse".

November 29, 1945: Address by Sir Trent de Crespigny on "Notes of a Visit to America".

January 31, 1946: Sound coloured film on "Chest Surgery", featuring Mr. Tudor Edwards, a leading chest surgeon of London, with discussion opened by Dr. D. R. W. Cowan.

February 28, 1946: Clinical evening at the Royal Adelaide Hospital.

March 28, 1946: Clinical evening at the Children's Hospital, with demonstrations by the honorary medical staff.

May 2, 1946: Mr. L. C. E. Lindon delivered an address on "Some Problems on Backache", with discussion opened by Dr. E. F. West.

Members were also invited to the following meetings:

August 15, 1945: Royal Australasian College of Surgeons, "Recent Advances in Surgery".

August 21, 1945: Two films shown by the Anaesthetic Section on "Open Drop Ether Anaesthesia" and "Endotracheal Anaesthesia".

October 10, 1945: Royal Australasian College of Surgeons clinical meeting.

November 20, 1945: Three films shown by Anaesthetic Section on "Nitrous-Oxygen-Ether", "Intravenous Anaesthesia" and "Spinal Anaesthesia".

March 13, 1946: Meetings of the South Australian Branch of the Royal Australasian College of Surgeons. Demonstration of case of "Patent Ductus Arteriosus" by Sir Henry Newland, and short descriptions of their experiences as medical officers whilst prisoners of war, by Mr. A. F. Hobbs and Mr. S. Krantz.

March 30, 1946: Royal Australasian College of Physicians.

#### Membership.

The membership of the Branch is 519, an increase of 44 on the previous year. The number of new members elected was 24, the balance representing deaths, transfers *et cetera*. It is with sincere regret that the Council records the deaths of Dr. H. E. Dunstone, Dr. T. G. Fleming and Dr. G. D. Harris.

#### Representation on Boards et Cetera.

**Medical Board of South Australia:** H. H. E. Russell.

**Dental Board of South Australia:** J. W. Close.

**Nurses Board of South Australia:** A. B. Russell.

**Metropolitan Infectious Diseases Hospital Board:** H. H. E. Russell, G. R. West.

**Australian Aerial Medical Services Council:** E. A. H. Russell.

**Australian Red Cross Medical Services Advisory Committee, South Australian Division:** B. H. Swift, H. M. Jay, R. John Verco.

**State Medical Coordination Committee:** E. A. H. Russell.

**Central Council of the Association, London:** Isaac Jones.

**Federal Council of the British Medical Association in Australia:** Sir Henry Newland, R. John Verco.

**Federal Council Contract Practice Committee:** R. John Verco.

**Saint John Ambulance Association:** H. G. Prest.

**Representative of "The Medical Journal of Australia":** W. J. Betts.

**British Medical Hall Company, Limited, Directorate:** G. H. Burnell, F. St. John Poole.

Attendances at Council and Committee Meetings.	Council.	Parliamentary Bills and Publicity.	Contract Practice.	Ethics.	Library.
BENNETT, N. R. .. .. .	15	—	3	—	—
BROWN, G. .. .. .	17	—	—	1	—
CORNISH, J. R. .. .. .	16	—	2	—	—
CHERRY, P. T. S. .. .. .	14	—	1	—	—
HEDDLE, F. F. .. .. .	17	—	1	—	—
JAY, H. M. .. .. .	16	4	3	1	—
MALLEN, L. R. .. .. .	16	—	2	—	—
NEWLAND, H. S. .. .. .	15	5	—	—	1
SWIFT, B. H. .. .. .	18	4	—	1	1
SMITH, G. WIEN .. .. .	14	—	—	—	—
SCHAFER, C. H. .. .. .	17	—	3	—	—
SYMONS, E. L. .. .. .	17	—	3	—	—
VERCO, R. JOHN .. .. .	17	3	2	—	—
WEST, R. F. .. .. .	17	1	2	1	—
WEST, E. F. .. .. .	16	—	—	1	—
Meetings held up to May 23, 1946 .. ..	18	5	3	1	1

*Mothers and Babies' Health Association Council:* R. John Verco.

*Parliamentary Committee to Inquire into Health Services in South Australia:* H. M. Jay.

#### *Sections.*

Except in one or two instances, owing to the absence of members on active service, meetings have been suspended during the war.

#### *Lodge Practice.*

There has been no alteration regarding rates and conditions under which lodge practice has been carried on during the year. The Federal Form of Agreement which will be applicable to all States as a result of many conferences between the Federal Council and representatives of the lodges is now nearing finalization. During the year the Council of the Branch, pending the completion of the Federal Form of Agreement, considered the question of treatment of lodge members for injury or illness who received compensation under the *Compensation Act* of South Australia. In other States provision is made in the lodge agreement to cover such cases, and where a lodge member is receiving compensation he does not receive treatment under the lodge agreement. As such provision does not exist in the South Australian agreement, the Council decided to approach the South Australian Friendly Societies Association with a view to having an additional clause in the lodge agreement, setting out that when a lodge member is receiving compensation under the South Australian or other act, he will not be entitled to treatment under the lodge agreement, thus bringing South Australia into line with the other States, and the new Federal Form of Agreement, which includes this provision. Believing that the present fees to lodge surgeons are inadequate and inequitable, the Council decided to approach the friendly societies for an increase in the fees. Before this was done, however, it was necessary to obtain from lodge surgeons certain information in order to give full support to the Council in their efforts in this direction. The response from lodge surgeons has been very disappointing, and a further appeal to them it is hoped will furnish the essential information to bring about a successful approach to the friendly societies.

#### *Future of Medical Practice.*

There is no doubt that the ultimate objective of the present Federal Government is that there shall be a complete medical service available to the community free of charge. Members have been advised from time to time of the actions taken by the Federal Council of the British Medical Association in this matter, and further reference has been made in the Press by officials of the Federal Council to the views of the profession on the question of a "free medical service". The Federal Government has been informed that a "free medical service" is unnecessary, and that the present structure of medical practice with certain additions, already expressed to the Parliamentary Joint Committee on Social Security set up by the Government, by officials representing the British Medical Association, is adequate for the needs of the community. It is understood that plans are being prepared by the Government to carry out its aims, and until these are available nothing further can be done, as the next move must come from the Government.

#### *Pharmaceutical Benefits Act, 1945.*

Although the act has been passed, in spite of the views placed before the Federal Government by the Federal Council, it has not yet come into operation. The Federal Council has always laid down the principle that a doctor must be free to prescribe whatever medicine he considers necessary for the welfare of the patient. The medical profession are not alone in their opposition to the act in its present form, as the Pharmaceutical Society representing the chemists are also opposed to it. Members have been given full details of the steps taken by the Federal Council and informed why, as a profession, they cannot cooperate in the matter. The decision of the High Court on an appeal by the Medical Society of Victoria declares the act to be invalid in the present form, and the matter is therefore in abeyance for the time being.

#### *Workmen's Compensation Act, 1932-1943.*

During the 1944 session of the South Australian Parliament the Government introduced a bill to amend the *Workmen's Compensation Act* which provided *inter alia* additional compensation in respect of medical expenses which are incurred by the workman as a result of his injury.

The bill was assented to in December, 1944. After several conferences with the Fire and Underwriters' Association of South Australia the Council came to an arrangement applicable in cases where the medical practitioner looks to the insurer for payment for his services instead of his patient. A schedule of fees has been laid down and the arrangement will ensure a medical practitioner obtaining some payment when treatment is given to a workman claiming compensation under the act. In Victoria, New South Wales and Western Australia a similar arrangement made by the Councils of the Branches and authorized insurers is in operation and has worked satisfactorily, and the Council feels that it will prove satisfactory to members of the South Australian Branch.

#### *Medical Benefits for Widows, Widowed Mothers and Orphans, 1939 War.*

The Federal Council has now finalized an agreement with the Repatriation Commission for providing treatment for widows, widowed mothers and orphans, 1939 war, and 169 members of the Branch have expressed their wish to participate in the agreement.

#### *Federal Council Brochure on Medical Service.*

It has been the intention of the Federal Council to issue for publication a brochure in reference to a complete "medical service and how best to attain it", but although a draft statement has been prepared it has not been finalized. It is desired to issue a statement to make it attractive to the lay reader. The Federal Council has referred the matter to the publicity subcommittee and it is expected that the brochure will be available in the near future.

#### *Tuberculosis Services.*

The Council has given consideration to the tuberculosis services of the State. On December 11, 1944, following a report from the Permanent Tuberculosis Committee, several recommendations were forwarded to the Government, one of which was the appointment of a full-time director of tuberculosis services if a suitable man could be found. The question of the provision of adequate pensions and better facilities for treatment of those suffering from tuberculosis has been taken up with the authorities. In view of the appointment of a committee set up by the South Australian Parliament to inquire into the health services of the State, the Council hopes that as a result of the efforts made over a long period to improve matters. Better and adequate provision for tuberculosis sufferers is a most important matter vitally concerning the health of the State.

#### *Federal Medical War Relief Fund.*

During the year a fund available for the benefit of members of the medical profession in Australia, whose health and interests have suffered through going on war service or through enemy action, has been established by the Federal Council, and the Council recommends the fund to the generous support of members of the Branch.

#### *Motor-Cars for Doctors.*

The urgency of the need for the provision of motor-cars for doctors has been stressed to the authorities through the Federal Council throughout the year, and a letter sent to the Federal Council by the South Australian Council was forwarded to the Director of Road Transport as reflecting the views of all the Branches. Every effort has been made to improve the position, which has also been taken up with the State Liquid Fuel Control Board and the South Australian Medical Coordination Committee.

#### *The Late Lord Dawson of Penn.*

The death of Lord Dawson of Penn was a great loss not only to the Parent Association, but to the British Medical Association throughout the world. A message of sympathy to the Parent Association and the relatives of Lord Dawson was sent on behalf of the South Australian Branch by the Council.

#### *Sir Henry Newland.*

In response to a strong feeling by members of the Branch, the Council felt that the time had arrived when the services of Sir Henry Newland to the Branch and to the profession throughout Australia should be recognized in a tangible way. For over 48 years Sir Henry has been actively associated with the work of the Branch, and it was considered opportune for the Branch to show its appreciation of his services. An excellent response has been made by

members to the suggestion of the Council, and a presentation will be made to Sir Henry at the annual meeting on June 26, 1946.

#### Reorganization of the Profession.

The Council is of the opinion that it is imperative in the interests of the medical profession in Australia that full powers be accorded the Federal Council to conduct negotiations on any matters affecting the profession in Australia as a whole. The Federal Council is seeking additional powers so as to give it full autonomy, and the South Australian Branch Council supports this action.

#### Rehabilitation of Medical Officers who have Served with the Armed Forces.

The problem of members released from the armed forces to find employment in the practice of their profession has engaged the attention of the Council throughout the year. An advisory committee was set up to assist members who desired help in finding suitable work and contribute medical service to the community. To guide the committee a questionnaire was sent to members in civil practice to ascertain if they would assist in the rehabilitation of those who have been on active service, by taking an assistant or partner, and from the information given it has been possible to place several in suitable employment. There is much, however, to be done in this direction, and a further appeal will be made to members for cooperation in this matter so that every avenue for placing these returned medical officers may be employed.

#### Commonwealth Government Hospital Policy.

The question as to whether under the new conditions the profession is willing to render honorary service to patients who can afford to pay for private treatment, but are admitted to public beds in hospitals, is one that will need to be further considered in the near future. Until the position is clarified, the honorary staffs of the Royal Adelaide and Children's Hospitals have by resolution carried at meetings of the staffs decided to carry on in an honorary capacity for the present.

#### Improvement of Medical and Nursing Services.

In response to a request from the Federal Council, resolutions conveying the views of the Council for consideration by the National Health and Medical Research Council were forwarded. The Council considered that the present difficulty and the most pressing need was for nurses and domestic staff being made available in private hospitals and that improved conditions for nurses and domestic staff be provided.

#### Hospital Accommodation.

The lack of proper hospital facilities has been a matter of concern to the Council. As far back as January 23, 1944, a communication was forwarded to the State Government setting out the serious position that existed owing to the closing down of several private hospitals and offering suggestions with a view to improving matters. In February, 1944, the Council called a conference of matrons of private hospitals in the metropolitan and suburban areas to discuss the situation and endeavour to improve matters. Unfortunately, although everything possible has been done, the position has become worse, and at present is causing the profession a great amount of anxiety. The Council fully

realizes how essential it is to provide additional hospitals, and will lose no opportunity of doing all it possibly can to assist in this direction.

#### Bankers Health Society (South Australian Division).

In August last the Bankers Health Society (South Australian Division) advised that the society was considering the extension of the society's activities to include the general public. After conferences with representatives of the society and inquiries in the other States, the Council approved of the scheme being made available to the general public in addition to bank officials.

#### Parking of Doctors' Cars on North Terrace.

Representation has been made to the City Council for improved facilities for the parking of doctors' cars on North Terrace, pointing out the inconvenience caused owing to the difficulty of obtaining parking space in the vicinity of consulting rooms. The Lord Mayor and Town Clerk stated that close supervision regarding the parking of cars on North Terrace would be given by the City Council inspectors. As a result of the efforts of the Council additional space has been set aside in Kintore Avenue for the parking of doctors' cars, and the action of the City Council is appreciated.

#### End of War.

The end of hostilities in the Pacific brings to an end the Second World War and is a cause for thanksgiving. The services rendered to the nation by the medical profession has been outstanding, and with pride we record the work of members of the South Australian Branch during the great and long struggle. The following received honours and awards.

#### Honours and Awards to Members.

The Council tenders its congratulations to the following members on the honour conferred on them: Officer of the Military Division of the Most Excellent Order of the British Empire: Colonel H. M. Fisher. Officer of the Most Excellent Order of the British Empire: Dr. Freda E. Gibson. Admitted to the Venerable Order of Saint John of Jerusalem as Serving Brothers: Dr. Gilbert Brown and Dr. S. R. Hecker.

The above report is a brief summary only and represents some of the activities of the Council during the year.

Many other matters have been considered necessitating many additional meetings, and a reference to the number of meetings held will give some indication of the time involved and service given by members of the Council in the interests of the Branch.

I desire to express my appreciation for the assistance and cooperation given to me during my year of office as President by members of the Council.

Our lay secretary has been of great assistance and has identified himself enthusiastically with the work of the Branch. We welcome back to the office the assistant secretary, Mr. Frank Dobbie, after five and a half years' service with the Australian Imperial Force.

(Signed) BRIAN H. SWIFT,

President.

#### Financial Statements.

The financial statements were received and adopted on the motion of Dr. P. T. S. Cherry, seconded by Dr. R. J. Verco. The statements are published herewith.

#### SOUTH AUSTRALIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION INCORPORATED.

##### Income and Expenditure Account for the Year Ended December 31, 1945.

	£	s.	d.	£	s.	d.		£	s.	d.	£	s.	d.
To British Medical Association, London	640	13	9				By Subscriptions—						
" THE MEDICAL JOURNAL OF AUSTRALIA	409	3	6				City	2,064	3	0			
				1,049	17	3	Country	459	18	0			
" Amounts written off Subscriptions				12	2	0	Accrued	88	18	6	2,612	19	6
" Library Subscriptions				101	15	0	" Sundry Subscriptions				7	8	0
" Federal Council Capitation Fee				354	15	0	" Interest				13	6	1
" Postages and Telegrams				81	17	5	" Medical Certificate Books				4	0	5
" Stationery and Printing				93	17	10							
" Telephone				27	14	5							
" Rent				50	14	3							
" Salaries				733	18	6							
" Depreciation				8	0	0							
" General Expenses				121	2	6							
" Surplus Income over Expenditure				1	19	10							
				£2,637	14	0					£2,637	14	0



## LIBRARY FUND ACCOUNT, DECEMBER 31, 1945.

	£	s.	d.		£	s.	d.
To University .. .. .	150	0	0	By Balance brought down, December 31, 1944 ..	62	5	9
" Depreciation .. .. .	3	10	0	" Interest .. .. .	4	1	5
" Balance .. .. .	14	12	2	" Library Subscriptions .. .. .	101	15	0
	£168	2	2		£168	2	2

## GENERAL FUND ACCOUNT, DECEMBER 31, 1945.

	£	s.	d.		£	s.	d.
To Amount written off .. .. .	7	5	0	By Balance brought down, December 31, 1944 ..	2,829	10	11
" Balance .. .. .	3,024	5	9	" British Medical Hall Company Limited, Shares ..	200	0	0
	£3,031	10	9	" Surplus Income of Expenditure .. .. .	1	19	10
					£3,031	10	9

SOUTH AUSTRALIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION INCORPORATED.  
Balance Sheet as at December 31, 1945.

LIABILITIES.				ASSETS.			
	£	s.	d.		£	s.	d.
Sundry Creditors—				Plant and Fittings (less depreciation)	42	0	0
General .. .. .	118	18	5	Library Account—			
British Medical Association, London .. .. .	33	3	0	Delineascope (less depreciation) ..	7	10	0
THE MEDICAL JOURNAL OF AUSTRALIA .. .. .	23	2	6	Projector (less depreciation) ..	11	10	0
				Lister Medal and Dies .. ..	6	0	0
Lister Oration Fund (invested in Savings Bank as per contra) ..			52	17	0		67
National Health Insurance Fund (invested as per contra) ..			375	9	1		0
Commonwealth Loan .. .. .	300	0	0	British Medical Hall Company Limited—			
Savings Bank .. .. .	65	14	1	Share Account—268 Shares at £10 each .. .. .	2,680	0	0
Interest (to be invested) .. ..	9	15	0	Commonwealth Bonds—Gift per contra for purchase of Shares ..	200	0	0
	375	9	1		2,880	0	0
Library Fund (included in Savings Account) .. .. .			14	12	2		
British Medical Hall Company Limited—Dividend Account ..			374	9	3		
Federal Council Organization Fund ..			26	13	0		
General Fund—				Subscriptions in Arrear .. .. .	88	18	6
Balance, January 1, 1945 .. ..	2,823	10	11	Sundry Debtors—			
Less Amount written off .. ..	1	5	0	General .. .. .	50	12	7
	2,822	5	11	British Medical Hall Company Limited .. .. .	70	2	0
Add Gift Account, British Medical Hall, Share Account ..	200	0	0	Special Account .. .. .	3	12	6
Surplus Income over Expenditure for Year .. .. .	1	19	10	Eye, Ear, Nose and Throat Section .. .. .	6	5	0
National Bank of Australasia Limited—Overdraft .. .. .			81	10	7		
				Special Accounts—			
	£4,125	1	6	Savings Bank of South Australia—			
				Library Account .. .. .	123	11	2
				Building Fund .. .. .	309	19	3
				Listerian Oration Fund .. ..	52	17	10
				National Health Insurance Fund .. .. .	65	14	1
				Commonwealth Loans—			
				National Health Insurance Fund .. .. .	300	0	0
					852	2	4
				Cash—			
				Savings Bank of South Australia ..	29	15	4
				Commonwealth Savings Bank ..	11	4	11
				In Hand .. .. .	10	15	2
					51	15	5
					£4,125	1	6

WALTER C. DOBBIE, Secretary.

## Auditors' Report.

We hereby report that we have examined the books and accounts, as produced to us, of the South Australian Branch of the British Medical Association Incorporated for the year ended December 31, 1945. In our opinion the above Balance Sheet is properly drawn up so as to exhibit a true and correct view of the affairs of the Branch as at the above date, according to the best of our information, the explanations given us, and as shown by the books produced.

Adelaide,  
April 2, 1946.MUECKE, PICKERING AND MITTON,  
Chartered Accountants (Australia), Auditors.

PERCIVAL T. S. CHERRY, Honorary Treasurer.

## Election of Office Bearers.

The President announced that the following office bearers had been elected for the ensuing twelve months.

President: Dr. L. R. Mallen.

Vice-President: Dr. F. L. Wall.

Honorary Treasurer: Dr. P. T. S. Cherry.

Honorary Medical Secretary: Dr. R. F. West.

Members of Council: Dr. J. M. Dwyer, Dr. A. D. Lamphee, Dr. C. O. Rieger and Dr. C. E. King (country member).

Messrs. Muecke, Pickering and Mitton were appointed auditors for the ensuing twelve months.

## Induction of President.

Dr. Brian Swift inducted Dr. L. R. Mallen as President for the ensuing twelve months.

## Votes of Thanks.

On the motion of Dr. L. C. E. Lindon, seconded by Dr. Guy London, a vote of thanks was carried to Dr. C. H. Schafer, Dr. F. F. Heddle, Dr. E. F. West, Dr. H. M. Jay and Dr. E. L. Symons, the retiring members of the Council.

## Retiring President's Address.

Dr. Brian Swift then delivered his retiring president's address (see page 181). Dr. Swift was thanked for his address.

## NOTICE.

THE General Secretary of the Federal Council of the British Medical Association in Australia has announced that the following medical practitioner has been released from full-time duty with His Majesty's Forces and has resumed civil practice as from the date mentioned:

Dr. A. C. Armstrong, 217, Macquarie Street, Sydney (July 22, 1946).

## Naval, Military and Air Force.

## APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Number 129, of July 18, 1946.

## ROYAL AUSTRALIAN AIR FORCE.

## Citizen Air Force: Medical Branch.

The appointments of the following Temporary Flight Lieutenants are terminated on demobilization with effect from the dates indicated: L. H. S. Robbins (277463), 9th May, 1946, G. J. B. Phillips (267374), 10th May, 1946.

The notification in respect of the relinquishment of the grant of the acting rank of Group Captain to Temporary Wing Commander W. McL. Borland (251477) appearing in *Commonwealth of Australia Gazette*, No. 91, dated 16th May, 1946, is amended to read with effect from the 19th February, 1946.

The appointment of Temporary Flight Lieutenant T. J. Lowe (266786) is terminated on demobilization with effect from 17th May, 1946.

The appointments of the following officers are terminated on demobilization with effect from the dates indicated: (Temporary Squadron Leaders) M. M. Hutchings (253230), 8th May, 1946, I. L. Miller (281230), 13th May, 1946, Flight Lieutenant M. V. Clarke (253717), 15th May, 1946, (Temporary Flight Lieutenants, Acting Squadron Leaders) H. E. Williams (255176), 30th May, 1946, J. H. Smith (253338), 11th June, 1946, (Temporary Flight Lieutenants) L. L. Marshall (257388), 27th May, 1946, J. B. Curtis (257233), 31st May, 1946, D. McMichael (257551), 3rd June, 1946, K. F. Brennan (253473), 7th June, 1946.

## Reserve: Medical Branch.

Charles John Newhill Leleu, O.B.E. (1176), is appointed to a commission with the temporary rank of Wing Commander with effect from 5th December, 1945.—(Ex. Min. No. 193—Approved 10th July, 1946.)

## Obituary.

## WILFRED VICKERS.

WE are indebted to Dr. H. R. G. Poate for the following account of the career of the late Wilfred Vickers.

The sudden demise of Wilfred Vickers was a sad blow not only to his family and immediate personal friends, but to the various charitable organizations with which he had been connected for many years.

When he completed his two years' residence at the Royal Prince Alfred Hospital he journeyed to London and spent a considerable period of time at The Great Ormond Street Hospital for Children, where he was resident. During this time he developed gangrenous appendicitis and was seriously ill for some time. Upon his return to Sydney he received an appointment to the Royal Alexandra Hospital for Children, where he was imbued with the principles and examples of the late Sir Charles Clubbe, and subsequently came under the influence of Sir Robert Wade, whom he ultimately succeeded as chairman of the board of the hospital. This outstanding work was in connexion with the organization of the orthopaedic department and the institution of the auxiliary hospital at Collaroy.

He was closely associated with the New South Wales Society for Crippled Children and with the Far West Children's Health Scheme. He covered all the country districts of New South Wales doing surveys of crippled children.

He had a fine record of service with the Saint John Ambulance Brigade in New South Wales and was appointed to the district staff in 1927. Ten years later he became assistant commissioner and was appointed commissioner on January 1, 1943. Upon the formation of the Commandery of the Order in Australia, Lord Gowrie selected him for the position of Director of Ambulance. He was made a Serving Brother of the Order in 1935, officer in 1936, commander in 1940, and just before his death had received advice of promotion to Knight of the Order. He received the Service Medal of the Order of Saint John in 1938.



He had a long and distinguished military career. He belonged first to the University Scouts and joined the Australian Army Medical Corps in July, 1914. He served for a time on Number 2 Australian Hospital Ship and subsequently transferred to the 9th Field Ambulance and later became Deputy Assistant Director of Medical Services of the 3rd Division, Australian Imperial Force. He was awarded the Distinguished Service Order and also the *Médaille de la reconnaissance française*. He received the Efficiency Decoration. After the Great War he continued his military service in the militia as Deputy Assistant Director of Medical Services, 1st Division, subsequently commanding the 2nd Field Hygiene Section, the 4th Cavalry Field Ambulance and the 8th Field Ambulance. In March, 1939, he became Assistant Director of Medical Services of the 2nd Division, and in May, 1940, Assistant Director of Medical Services of the 1st Division. In the latter position he was responsible for the medical arrangements for the defence of Sydney, Newcastle and Wollongong districts. His superior officers considered him a keen teacher and one who took a lively interest in the training of junior officers.

In facing many of the difficulties met with when medical officers were available in restricted numbers his solution of the difficulties was ingenious and effective and often showed great originality of thought.

When the Voluntary Aid Detachment scheme was introduced in 1929 he was appointed State Controller for New South Wales and held this position until 1942. In 1944 he was appointed to the Joint State Council as a representative of the Order of Saint John. He was one of the founders of the New South Wales Institution of Hospital Almoners and was president up till the time of his death.

As will be seen from the many activities in which he was engaged, he has left a gap which no one man can fill again,

and all classes of the community will feel the loss of a good friend. He was without thought of self, and in times of difficulty or trouble would never spare himself to help his friends.

He had an extraordinary way of gaining the friendship of children, and many families will miss him.

Those of us who worked closely with him knew his worth and regret very sincerely his untimely end.

Mr. R. O. Beale, the Superintendent of the New South Wales Society for Crippled Children, writes:

Dr. Wilfred Vickers's first association with the New South Wales Society for Crippled Children was pre-natal. Before the society was formed, before the Rotary Club was quite sure how the job should be tackled, we sought his wise advice and counsel. Our original plans were subjected to his and Dr. Robert Wade's opinion. Their guidance was unfailingly right. For seventeen years they guided our steps, showed us the pitfalls, the snares and dangers lying in wait for enthusiastic lay people.

This was something more than sitting on a comfortable judicial bench and handing down verdicts and decisions. It almost always meant for him a careful research into and a study of a particular aspect of surgery or medicine or rehabilitation on which authoritative advice was needed. Many a time he reserved his decision. He would think it out and finally give as complete a diagnosis and prognosis of our trouble as he would have had we brought an orthopaedic case to his consulting rooms.

Dr. Vickers was a director of the society and remained an active energetic worker throughout the war years when the call for his special services was insistent and overwhelming.

Dr. Vickers was not an optimist—no really great surgeon could be that—but he was an enthusiast. Always he was ready with encouragement for the lay people who thought they could see a useful contribution to the cause. His advice almost invariably was: "Go ahead. You won't cure it that way, but you will help, and God knows we surgeons need your help."

No one will ever be able to assess in terms of guineas the advice he gave away to competent, experienced business men anxious to invest their capital and labour in a worthwhile cause—anxious not to waste any, nor to spoil the ship for a ha'p'orth of tar.

Possibly his greatest contribution to lay efforts was in his guidance of the efforts of the Society for Crippled Children in its attempt to play a part in the poignant, difficult and challenging problem of cerebral palsy. He willingly agreed to be chairman of their standing committee on "Spastics". (The very name—which it is not proposed to alter now—is significant of the innocence of the public on a matter which is its own responsibility.)

He encouraged the society to make a liberal annual contribution to the Mosman Spastic Centre; he advised the society to establish its own small spastic centres throughout the metropolitan area. He urged the building of a model "centre" under the wing of the Royal Alexandra Hospital for Children, where the services of physiotherapists, speech teachers, occupational therapists, dietitians and orthopaedic surgeons would be at short call. His co-directors of the Society for Crippled Children accepted his advice.

Probably his best contribution to the cause of the physically handicapped was his kindly sympathetic influence towards the coordination of all the diverse, but parallel, organizations working in the same field. This is not the appropriate place to list the various bodies for whom he worked. Each would claim him for their very own. But he belonged to none of them. He belonged to all of them.

And even that generalization is wrong. It implies the past tense—as if his influence had passed away with the past. It has not. It is of the things that are imperishable. Faith and hope and charity, wisdom and kindness do not pass away. They are imperishable, more durable than any granite. They are intangible, and—therefore perhaps—imperishable.

ARTHUR WALDO CONNELLY.

We regret to announce the death of Dr. Arthur Waldo Connelly, which occurred on July 27, 1946, at Upper Hawthorn, Victoria.

ROBERT MARSHALL ALLAN.

We regret to announce the death of Professor Robert Marshall Allan, which occurred on July 29, 1946, at Melbourne.

#### WESLEY RAINSFORD GROVES.

We regret to announce the death of Dr. Wesley Rainsford Groves, which occurred on July 30, 1946, at Melbourne.

### Correspondence.

#### THE MIGHT OF THE MITE.

SIR: In March of this year, the loading of coal on two vessels for interstate ports was held up for an unusual reason.

The coal trimmers were complaining of an itch while trimming the coal, and refused to carry on until the nuisance was abated. The actual history is as follows. Both vessels had carried bulk wheat during the war. On beams and ledges in the holds a certain amount of wheat had collected and remained. This had become very weevilly, and as the height of coal reached the beams and disturbed the wheat, weevils and small moths were noticed, and the trimmers claimed that the rash they developed was due to this. Two of them were examined by me, W.N., aged thirty-five, and S.D., aged fifty-seven, both coal trimmers. There was a papular vesicular follicular rash on the body, and worse across the back and round the armpits and waist. In the scrapings of these examined microscopically, a very small mite was seen, the size being about 12 by 9 microns. The mite, as seen, did not correspond with *Pediculoides ventricosus*. A mild antiseptic bathing and ointment produced a rapid cure. Ships were twice sprayed by a pest exterminating firm of this town, and loading was resumed without further incident.

"Great things from little causes, spring."

Yours, etc.,

Commercial Bank Chambers,  
17, Bolton Street,  
Newcastle.  
June 3, 1946.

A. C. ARNOLD.

#### THE LISMORE MEDICAL PRACTITIONERS' ASSOCIATION.

SIR: By resolution of the members at the winding-up meeting of the Lismore Medical Practitioners' Association it was decided that details of its activities be forwarded to THE MEDICAL JOURNAL OF AUSTRALIA.

At the general meeting of the North-Eastern Medical Association, held at the latter end of 1939, it was decided that various localities should form their own schemes for protection of practices of medical men who might volunteer or be called up for service with the armed forces. Accordingly, in the early part of 1940, several meetings were held in Lismore at which the outlines of an agreement were decided upon. This agreement was drawn up in legal form and only those medical practitioners who had signed the agreement prior to the end of July, 1940, were eligible for membership. Ten practitioners signed the document, the chief provisions of which included:

1. Three trustees managed the affairs of the Association, a medical practitioner, a solicitor and an accountant.
  2. The trustees were each month to fix a levy to be paid by each member remaining in his own practice.
  3. The levy on each member in any one year was not to exceed 10% of his taxable income from practice or £200, whichever was the less.
  4. The trustees were given power to recover any arrears of the levy in court.
  5. The trustees were to pay, in monthly instalments, £400 per annum to each member absent on full-time duty from his practice.
  6. All friendly society capitation fees of patients of members on full-time duty were to be paid to the trustees. Such patients were to be treated by the remaining members without capitation fee.
  7. Voluntary contributions would be received from any medical practitioner who had not signed the agreement.
- The first of our members to enlist in May, 1941, the late Dr. J. B. Oakeshott, unfortunately lost his life in Borneo just a fortnight before hostilities ended. By the beginning of 1943 we had three members on overseas service, and payments to their dependants continued until March, 1946. The Association was finally wound up at a meeting early in May, 1946.



It is felt that the members have reason to be proud of their efforts. The total receipts of the Association during its existence amounted to £4,728. Of this, £3,999 was paid by practitioner members, £138 came from voluntary donations, and £590 was paid in friendly society capitation fees. The sum of £4,538 was paid to absent practitioners' representatives, and trustees' fees and expenses, legal and other, amounted to £189.

Yours, etc.,  
J. R. RYAN.

Lismore,  
New South Wales,  
July 23, 1946.

### TRIGEMINAL NEURALGIA.

Sir: Dr. J. F. Clark, of Perth, has not correctly read my letter which appeared on May 25. I stated that interference (I should have said division of) with the sensory root of the fifth nerve was worse than useless in trying to cure "periodical supraorbital neuralgia". No mention of trigeminal neuralgia was made by me. I am quite aware that typical cases of trigeminal neuralgia are cured or relieved by division of the sensory root, but on really good authority I have been told that periodic supraorbital neuralgia is never cured by this operation. Apparently this form of neuralgia is in a different category to the typical trigeminal. What nobody up to the present has been able to let me know is the reason why these operations have caused the pain to be permanent over the whole distribution of the fifth nerve.

Yours, etc.,  
ALEC LYONS.

Eaglehawk,  
Victoria,  
June 26, 1946.

### DIAGNOSIS OF ANXIETY NEUROSIS.

Sir: It has long been the custom to diagnose anxiety neurosis only when organic disease has been excluded by a thorough physical examination. This position has been unsatisfactory for several reasons. In the first place the examination takes a good deal of time even without the additional time and money spent on X rays, blood tests, lumbar punctures *et cetera*. Nor does it completely exclude the early stages of a number of obscure or deep-seated conditions such as cerebral arteriosclerosis, general paralysis *et cetera*. And the results of the examination frequently lead to confusion where the findings appear insufficient to account for the symptoms, for example, slight "tenderness" without muscular resistance over the appendix, increased density of sinus shadows in X ray, slight astigmatism and so on, or where the findings, though positive, seem inconsistent with the symptoms, such as epigastric tenderness and hypochlorhydria or cardiac enlargement and nocturnal dyspnoea. Finally, to make the problem more difficult, organic and functional conditions may coexist, as, for example, coronary occlusion and cardiac neurosis.

Anxiety neurosis may now be diagnosed by its own positive signs. The physical examination is no longer an essential preliminary, nor can it ever prove the existence of a neurosis. As T. A. Ross says ("The Common Neuroses", Chapter V): "Anxiety neurosis has positive symptoms of its own and no diagnosis of neurosis should be made unless these symptoms are present." These symptoms have long been noticed; it is their significance which has escaped us. Patients with "nerves" are a daily experience in general practice. The combination of tiredness, insomnia, depression and irritability is all too familiar. The multiplicity of pains in various parts of the body without anatomical consistency leads us intuitively to suspect a neurosis. The personal history frequently discloses previous nervous breakdowns, and the family history reveals the presence of "highly strung" parents, siblings or children in the present or past environment. Anxiety neurosis is in this respect "infectious", for example, to cure enuresis one may first have to treat the "problem parents".

There are, however, three positive signs, any one of which indicates the presence of a neurosis:

1. Symbolism in the symptomatology. The patient with frontal sinusitis merely states that he has a headache, but the neurotic may hesitate, say it is difficult to describe, and then wrap the symptom in the most bizarre and unique

symbolism, frequently accompanied by gesture. For example: "I feel as though the muscles are falling off my leg in flakes"; "I can feel the shape of the shoulder blade with the pain"; "I have pains in the stomach like a wire tightening"; "my eyes feel as though they had water dropping on them" (simultaneously the patient half-closed her hands, placed the thumbs on the temples and solemnly demonstrated by rapidly flexing and extending the index fingers); "my eyes feel lumpy"; "my stomach is fluttering like this" (she lowered her hand in a series of jerks).

2. Suppressed emotion. This is readily detected by such questions as: "Do you ever feel like having a good cry?" "Do you worry over little things?" "Are you depressed?" "Do you ever feel irritable?" To ask the question "Are you irritable?" may evoke a misleading reply. Many people are loath to damage their ego by such an admission.

3. The symptoms have a morbid value for the patient. What the patient gains from the symptoms may not be immediately apparent, but that they have a definite value is usually quickly obvious. These patients frequently bring a written list of symptoms from which they read and enlarge. When, however, the physician offers advice they are so little interested that they interrupt with fresh symptoms. The following quotations illustrate this attitude in the patient: "I feel as though my womb was bursting" (she mistakenly believed she was pregnant and subconsciously desired abortion); "I used to go out and help people, that's all I had to live for, but this [pain] blocks me" (it protects her from being imposed on); "perhaps there's nothing can be done, what can't be cured must be endured" (she preferred her symptoms to the self-revelation necessary for cure); "I've gone right off smoking since these attacks started" (he was a very heavy smoker, and although warned of the harm had been unable to give up the habit); "I can't put my foot to the ground [smiling]" (she had just heard that her husband's invalid parents were coming to stay with her and she was in late pregnancy; she could not "put her foot down", but the illness served the same purpose).

Having made a diagnosis of anxiety neurosis during the history-taking, the question arises as to whether a physical examination should follow. If its purpose is purely to eliminate organic disease in the absence of any indications of such, then it is as logical as examining a patient with earache for uterine fibroids. If its purpose is to reassure the patient, then surely it is only of value if the patient feels the need of it. This point is quickly settled by the question: "Do you feel it may be something physical or is it just your nerves?" Patients with purely nervous symptoms, such as depression, insomnia, morbid fears *et cetera*, usually reject it. On the other hand patients with conversion symptoms, such as pains, dyspepsia, numbness, headache or ocular symptoms, usually expect it and therefore need it.

Is the order now reversed? Does the psychiatric investigation allow us to eliminate completely any functional disorder and so diagnose organic disease? Difficulty only arises in conversion hysteria where the whole of the anxiety is converted to somatic symptoms without obvious symbolism or morbid value, and such cases are rare.

The diagnosis of obscure conditions, such as deep-seated lesions in their early stages, which has caused so much uneasiness in the past, is now in a more satisfactory position. If the preliminary examination discloses no definite signs, the psychiatric investigation will quickly reveal the presence or absence of a neurosis. If the result is negative one may then confidently proceed with the more expensive search by blood examination, X ray, lumbar puncture, basal metabolic rate *et cetera*, or give a guarded prognosis while awaiting developments.

Treatment is aetiological in that it aims at the removal of the causes. The first stage of treatment, catharsis, releases the consciously suppressed and unconsciously repressed emotions and this will effect sufficient improvement in many cases. As this can be achieved in a few interviews, it falls within the scope of the general practitioner. Other cases continue to react emotionally to trivial causes. These cases have personality difficulties and usually eventually develop psychosomatic diseases such as hypertension, peptic ulcer, coronary disease, diabetes, hyperthyroidism *et cetera*. Treatment should include maturation of the personality which is more difficult.

Yours, etc.,  
A. A. PAIN.

142, Concord Road,  
Concord,  
New South Wales.  
Undated.

## Nominations and Elections.

THE undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

- Pirie, Bruce Carlyle, M.B., B.S., 1939 (Univ. Sydney), 23, Speed Street, Liverpool.  
 Hilton-Smith, Thea, provisional registration, 1946 (Univ. Sydney), Balmain and District Hospital, Booth Street, Balmain.  
 Moxham, Ross Moorcroft, M.B., B.S., 1945 (Univ. Sydney), 8, Wiyella Court, West Esplanade, Manly.  
 Brathwaite, Patricia Constance, provisional registration, 1946 (Univ. Sydney), Sydney Hospital, Macquarie Street, Sydney.

### THE FEDERAL MEDICAL WAR RELIEF FUND.

THE following contributions to the Federal Medical War Relief Fund have been received:

#### Victoria.

- D. M. Embelton, £50.  
 Anonymous, £26 5s.  
 B. Stewart Cowen, £25.  
 Roland R. Wettenhall, A. H. Hill, £21.  
 George M. Haydon, £20.  
 H. E. Robinson, F. W. Grutzner, Alan B. McCutcheon, W. L. Carrington, W. M. Lemmon, Keith D. Fairley, H. Friedman, Frank D. Burke, Francis F. D'Arcy, R. A. McOmish, Leighton O. D. Weber, Kenneth F. O'Donnell, Marjorie Gilchrist, Sidney F. Ridley, £10 10s.  
 A. F. MacInnes, J. S. Reed, R. C. Brown, D. Yoffa, Nancy Lewis, William Sloss, £10.  
 J. R. Sherwin, Alec. E. Lincoln, H. G. Furnell (first instalment), J. S. Bothroyd, Reginald Howden, K. B. Burwood, W. Pryce Heslop, George Swinburne, H. S. Bourke, W. McL. Smithers, R. N. Scott Good, £5 5s.  
 E. R. Cordner, £5.  
 Frank Shanasy, Colin C. Wark, W. A. Kemp, T. G. Wynne, Bruce J. Robinson, Andrew Fraser, £3 3s.  
 S. G. Anderson, £2 10s.  
 J. Gavin Johnson, A. J. Macdonald, Lorna Lloyd-Green, D. B. Skewes, Tait Smith, W. McRae Russell, £2 2s.  
 R. W. Waddell, £1 1s.  
 Total: £468 1s.  
 Grand total: £14,573 6s. 6d.

## Books Received.

"Clinical Handbook for Residents, Nurses and Students", by V. M. Coppleson, M.B., Ch.M., F.R.C.S., F.R.A.C.S.; Third Edition; 1946. Sydney, London: Angus and Robertson Limited. 8½" x 5½", pp. 470. Price: 25s.  
 "Lectures on Midwifery and Infant Care: A New Zealand Course", by T. F. Corkill, M.C., M.S., M.R.C.P. (Ed.), F.R.C.O.G.; Third Edition, completely revised; 1946. Christchurch, Auckland, Wellington, Dunedin, Invercargill, New Zealand; London: Melbourne, Sydney and Perth: Whitcombe and Tombs Limited. 8½" x 5½", pp. 470.

## Medical Appointments.

The following appointments have been made by the Board of Management of the Royal Adelaide Hospital, Adelaide.  
 Honorary Physicians: Dr. G. A. Lendon and Dr. A. R. Southwood. Honorary Assistant Physician: Dr. E. F. Gartrell.  
 Honorary Surgeon: Dr. I. B. Jose. Honorary Assistant Surgeons: Dr. W. J. W. Close and Dr. I. A. Hamilton.  
 Honorary Allergist: Dr. D. L. Barlow. Honorary Ophthalmologist: Dr. M. Schneider. Honorary Assistant Ophthalmologist: Dr. G. H. B. Black. Honorary Assistant Anaesthetist: Dr. C. J. Helman and Dr. H. G. Prest.  
 Honorary Clinical Assistants: Clinical Section, Dr. R. C. Angove, Dr. R. N. C. Bickford, Dr. J. M. Bonnin, Dr. S. M. L. Dunstone, Dr. I. S. Magarey, Dr. M. W. Miller, Dr. R. A. A. Pellew, Dr. C. T. Piper, Dr. C. B. Sangster, Dr. R. F. West, Dr. J. W. Sangster and Dr. M. W. Fletcher; Surgical Section, Dr. J. R. Barbour, Dr. N. J. Bonnin, Dr. A. G. Campbell, Dr. D. C. Dawkins, Dr. G. M. Hone, Dr. W. W. Jolly, Dr. J. R. Magarey, Dr. D. G. McKay, Dr. L. J. Ternouth and Dr. G. H. Solomon; Allergy Clinic, Dr. J. E. Bateman;

Dermatological Section, Dr. C. H. Schafer; Ophthalmological Section, Dr. D. O. Crampton, Dr. T. L. McLarty, Dr. S. Pearlman, Dr. C. S. Swan; Gynecological Section, Dr. H. E. Fellow, Dr. H. F. Hustler, Dr. R. L. Verco and Dr. A. D. Byrne.

Dr. H. F. Haselgrove has been appointed Resident Medical Officer at the Royal Adelaide Hospital, Adelaide.

## Diary for the Month.

- AUG. 13.—New South Wales Branch, B.M.A.: Executive and Finance Committee.  
 AUG. 13.—Tasmanian Branch, B.M.A.: Ordinary Meeting.  
 AUG. 20.—New South Wales Branch, B.M.A.: Medical Politics Committee.  
 AUG. 21.—Western Australian Branch, B.M.A.: General Meeting.  
 AUG. 22.—New South Wales Branch, B.M.A.: Clinical Meeting.  
 AUG. 22.—Victorian Branch, B.M.A.: Executive Meeting.  
 AUG. 22.—South Australian Branch, B.M.A.: Council Meeting.  
 AUG. 23.—Queensland Branch, B.M.A.: Council Meeting.  
 AUG. 27.—New South Wales Branch, B.M.A.: Ethics Committee.  
 AUG. 28.—Victorian Branch, B.M.A.: Council Meeting.  
 AUG. 29.—South Australian Branch, B.M.A.: Scientific Meeting.

## Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

**New South Wales Branch** (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phoenix Mutual Provident Society.

**Victorian Branch** (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

**Queensland Branch** (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

**South Australian Branch** (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

**Western Australian Branch** (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

## Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

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